



Prevention of Decay of the Teeth.

By A. C. HART, Ph.B., D.D.S., M.D., San Francisco, Cal.

The first thing done in treatment for prevention of decay of the teeth is to take an impression of the mouth, usually in modelling compound, as in a case of irregularity. The models are labeled with the patient's name, age and the date. This is sufficient to show the condition of the mouth at the time of examination, and of the requirements of the case, treatment, etc.—that is to say, the articulation and how nearly they are self-cleansing. When the mouth is put in a thoroughly antiseptic condition, and all the work, fillings, bridge-work, etc., completed, as suggested by the models, another impression is taken, similarly labeled and put away for future reference.

After taking the first impression, the teeth are cleaned as thoroughly as possible, using pumice, engine, scalers, etc., polishing in between the teeth with gilling twine, which can be readily accomplished by the method given us by Dr. Louis Jack, which is as follows: With a piece of silk thread about a foot long, pass one end between the teeth, then pass the other end, pulling the two ends between the teeth until you have a loop projecting on one side. Through the loop thus formed pass a piece of gilling twine, medium size, and bring the two ends of the gilling twine together. Now continue pulling the silk between the teeth, carrying the gilling twine as caught in the loop. The gilling twine will now have the appearance and effect of a strip. This can be readily charged with pumice, carried in between the teeth by means of a little orange wood spatula, and the approximal surfaces thoroughly polished and cleansed.

If the teeth are very sensitive at their necks, a saturated solution of carbonate of potassium in glycerine is applied at the points of sensibility to counteract the action of ferments, thus allaying the hypersensitiveness. While this action is taking place (at these sensitive points), the rough edges and unsightly corners, that give to the individual an animal appear-

ance, are smoothed and polished, and the teeth are put in as artistic a condition as possible.

To the credit of Dr. William J. Younger, I believe, belongs the introduction of the so-called method "Artistic Treatment of Teeth." To be fully appreciated, one should see it as done by this master hand, whose genius, generosity and personal magnetism has endeared him to the profession.

**Grinding off Enamel
to
Preserve Teeth.**

Points often seen on cuspids, and the irregular lengths of the laterals and centrals, when ground off to approximate more in line, not only give to the teeth a more beautiful appearance, but likewise greatly increase their usefulness, and facilitate their cleaning on the part of the patient.

Pits and grooves, marking instances of interruption of development of the surface enamel, when ground out and polished, also tend to beautify the teeth and make them easier of cleansing.

At a clinic given by Dr. Wm. J. Younger before the Stomatological Club, on Artistic Treatment of the Teeth, I asked the question: "Will not the removal of so much enamel result in decay?" He replied, "No, I believe it prevents decay." "Why?" I asked. To which he said: "I do not know; I only know that it does not decay." I have been privileged to watch several of his cases, and strange as it may seem the teeth that have been so treated have resisted decay. The desire to know why these teeth resisted decay, even after the enamel had been removed, was an impetus for study, and I determined, if possible, to learn something more definite. Whether I have solved the question only time can tell. If, however, it leads others to study along similar lines, it will be a step in advance—a mark of scientific progress, so pleasing to Dr. E. S. Talbot.

Many years ago it was quite a common practice among some of our best dentists to perform an operation called the removal of superficial decay, by grinding out the partially decomposed enamel and polishing the surfaces. This, as you well know, actually arrested and prevented further progress of caries. Smooth and polished surfaces, while they remain as such, are nearly immune to the action of bacteria, owing first to the fact that the bacterial plaques and starchy foods have difficulty in agglutinating themselves to a polished surface, and, second, because the polished surface is more readily kept clean by the tongue and cheeks in mastication.

Do not hesitate to grind away all the enamel clear down to the dentine, if the treatment makes the tooth more easily cleaned. This surface will not decay if left smooth and polished. I am prepared to prove this statement, should the occasion demand it of me; also that enamel is less resistant to decay than dentine.

In Nature we see many animals without any enamel on the outside of the teeth; indeed, in some instances, it is in the inside and covered by the dentine; yet their teeth do not decay.

Nature teaches me that she places enamel on teeth not to protect them from decay, as brought about by acid-forming micro-organisms, but that they might be stronger and not wear out so quickly.

**Method
of
Cleansing Teeth.**

The surfaces of the teeth are thoroughly cleansed with an alkaline solution of peroxide of hydrogen, and the rubber dam adjusted over all the teeth from the twelfth year molar on one side to the corresponding tooth on the opposite side, leaving abundant space between the holes, so that there shall be no portion of the mucous surface of the mouth exposed. Double ligate the teeth with silk thread, size A, B, C, or D. This has been previously sterilized and waxed by soaking the spools in a solution of wax containing one per cent formaldehyde (added in the form of paraform, nearly solid formaldehyde). The dish that contains the wax is one of those porcelain-lined dishes, having a cover that fits very tightly, so that there is but little loss of the formaldehyde gas. This is kept in a water bath for six hours, and the spools are then taken out and dried with a sterilized towel, and placed in a case in which are kept some pieces of pumice stone saturated with formaldehyde.

The surfaces of the teeth are dried and then bathed with water of ammonia, medium. This is allowed to act for about three minutes; little pieces of cotton are packed in between the teeth so as to hold the solution in close proximity. After this has acted for about three minutes, and while the surfaces of the teeth are still wet, apply a three per cent solution of peroxide of hydrogen, well soaking the teeth. Allow this to act for about five minutes; then dry carefully, wiping off the surfaces of the teeth with sulphuric ether, having all the time directed upon the surfaces of the teeth a hot air blast so as to dehydrate, following the ether with ninety-five per cent alcohol, and the latter with absolute alcohol, completing the dehydration as much as possible; this is to occupy about five minutes more.

**Treatment
Producing
Immunity.**

Next there is applied to the teeth, a solution containing ten per cent of formaldehyde (of the forty per cent aqueous solution) and fifty per cent of alcohol. This is held in between the teeth with little pieces of cotton, as before described, and their surfaces kept continually bathed for forty minutes. If there should be any teeth very badly decayed, so as to have ached, and you are led to suspect close proximity of the pulp, flow paraffin or wax into the cavity of decay before applying the solution of formaldehyde. Formaldehyde has great penetrating powers, and its action upon exposed or partly exposed pulps

is very irritating and may result in an extreme case of pulpitis. In sterilizing these sensitive cavities, I generally rely on water of ammonia, oil of cloves and dehydration. Line the cavity with a resinous varnish and fill temporarily with cement.

Before removing the rubber dam, the surfaces of the teeth are dried, wiped off with a little weak water of ammonia, in order that there shall be no action of the formaldehyde upon the mucous surfaces of the mouth, as it is very irritating, and when locally applied in strong solutions, sometimes results in a bad slough.

In the treatment of the wisdom teeth, owing to the great difficulty of adjusting the rubber dam, after cleaning and polishing their surfaces as much as possible, cutting off the sharp corners on the cusps, polishing, etc., the surfaces are carefully dried, as well as the gum around the necks of the teeth, and wiped off with vaseline—this to hinder the action upon the gum of the saturated solution of nitrate of silver, which I afterward apply to the surfaces of the teeth for fully ten minutes. This leaves a metallic coating which is insoluble to bacteria, and being so far back in the mouth, is not a serious disfigurement. One may better have blackened wisdom teeth than decaying and aching ones, however white.

At the end of three or four months, have the patient return for examination and thorough cleansing of the teeth. This time the work will be very much easier. Do not fail, however, to adjust the rubber dam and sterilize in the manner already described. By repetition of this sterilization every three or four months, together with the more careful prophylaxis on the part of the patient, I have been able to arrest and prevent decay in those mouths environed with acid-forming bacteria and a mixed diet.

**Method of
Bleaching with
Hydrogen Peroxide.**

I might here refer to the bleaching of teeth by the use of peroxide of hydrogen, in which operation I use a twenty-five per cent ethereal solution. The bleaching will be found to be greatly facilitated by keeping the surfaces of the teeth damp with strong water of ammonia. Ammonia itself being an unstable compound, as is peroxide of hydrogen, the one acts upon the other in some manner so that free oxygen and nitrogen are liberated. The free oxygen has great penetrating and bleaching power, and will penetrate into the enamel from the surface, passing clear through and into the pulp chamber. So in the bleaching of teeth that are discolored from the death of the pulp, and the infiltration into the tooth of decomposed blood, unless you are sure the pulp contents have been removed, and the canal thoroughly sterilized and filled before beginning the bleaching, open into the pulp chamber with a small rose bur and thoroughly sterilize the tooth and fill the canal. By this means it is not necessary to remove any of the fillings that may be in the

tooth; the sterilizing of the canal is intended as a precautionary measure, inasmuch as the oxygen which has entered the tooth substance, unless this opening had been made, would be under pressure, and a portion of the putrescent contents would be forced into the apical space, producing acute pericementitis. The only thing new about this method is the use of ammonia in connection with the solution of peroxide of hydrogen, the

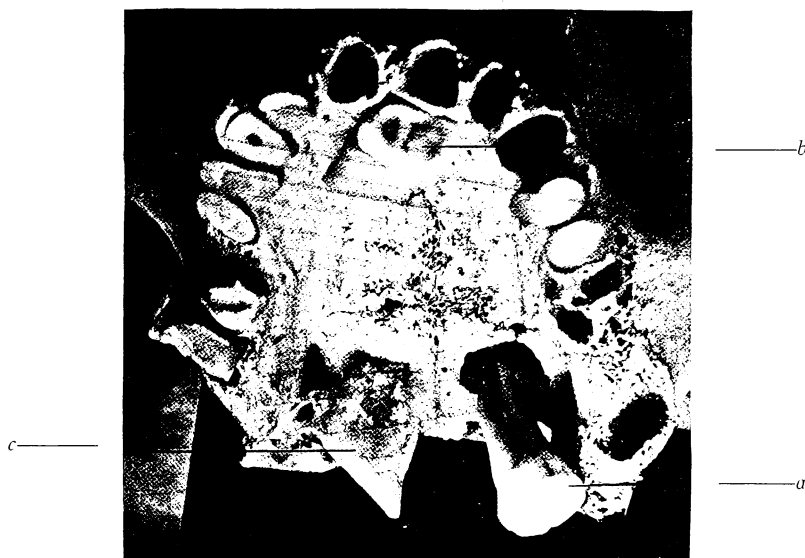


FIG. 1.

Upper jaw of Californian Indian. Teeth with enamel almost entirely worn off, yet no signs of decay. a—Upper second molar of Esquimaux. b—First bicuspid of Esquimaux; has but one root; evidences of erosion on cutting edge. c—Lower first molar of Californian Indian, showing marks of wear and pyorrhoea.

two being applied together, thus greatly facilitating the bleaching action of the tooth from the outside without the removal of the filling.

**Home Treatment
after
Immunizing.**

To return to the sterilizing of the teeth. The time consumed in putting the teeth in a sterile condition, as I have described, is sure to impress the patient with the importance of prophylactic measures, and the subsequent care given them by himself would be found a great source of gratification to you in your practice. If we would have patients cleanly in their habits, we must teach them to be cleanly, and be cleanly ourselves in our operations upon their mouth. The after-treatment by the patient is as follows:

I give my patients a mouth wash that contains an alkali, one to over-

come the action of the ferments of bacteria and the other to kill the bacteria or at least inhibit their action, an antiseptic and flavorings. If you would have your patient use your mouth wash and not the proprietary

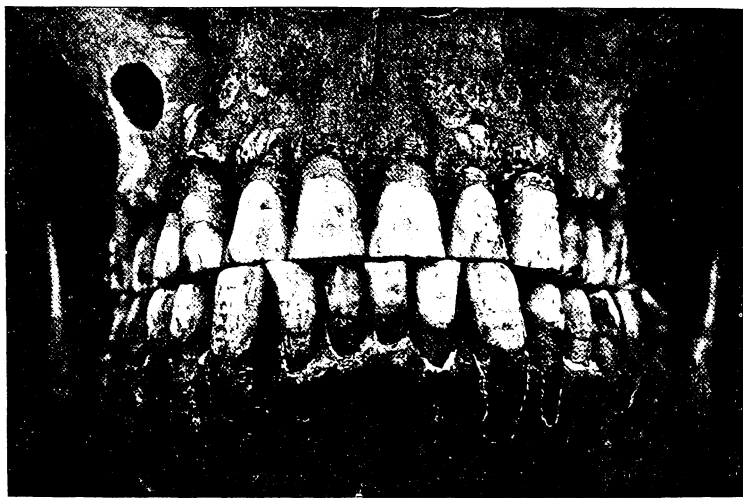


FIG. 2.
Edge to edge bite.

ones, you must make it so that it is agreeable. The formula for the mouth wash that I use is about as follows:

Alcohol, 95 C. P.	oz. ii.
Hydronaphthol,	grs. X. to XV.
Oil of Rose,	m. I.
Saccharine,	to suit taste—about 1 gr.
Carbonate of Magnesia,	ʒ. I.

To this stiff paste there is slowly added, stirring all the time in the mortar, sufficient water to make one pint. Such a procedure will finely divide the oil of rose, saccharine and other ingredients all through the water. If you wish to add formaldehyde, put in five or six drops of a forty per cent solution to a pint of the mouth wash. This will make it sufficiently strong.

Before using this wash, "balloon" the mouth out with water, as so graphically described by Dr. Crawford. Tell the patient to use plenty of water, for by this means he rids the mouth of large quantities of bacteria and particles of food. Now the mouth is ready for the wash, which is used as follows:

Into a glass place one teaspoonful of the mouth wash, and if the

patient has considerable bridge-work in the mouth, or is affected with pyorrhea, add one teaspoonful of peroxide of hydrogen three per cent to the mouth wash in the glass; thoroughly mix these and apply to the surfaces of the teeth with a tooth brush, in such a manner as to force the wash well in between the teeth and under the bridge-work. Caution the patient against too severe brushing of the gums; tell him to brush the

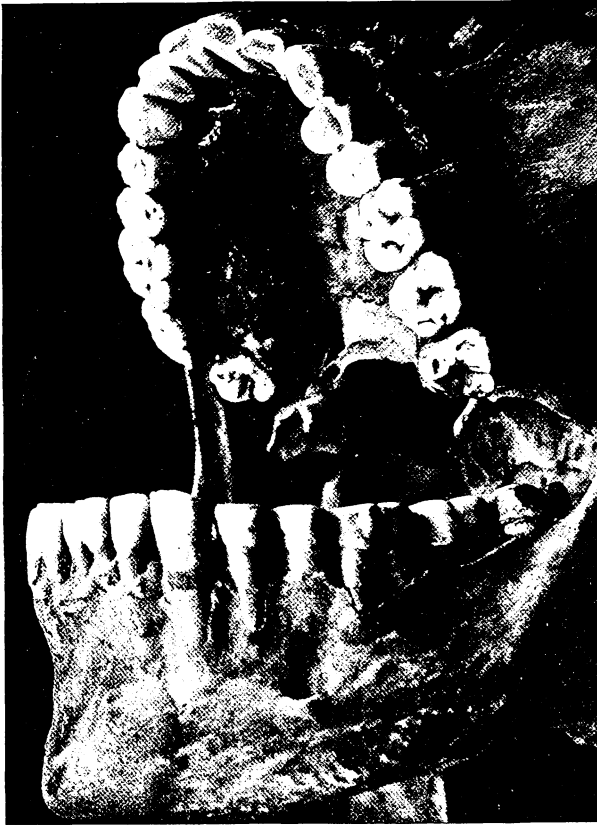


FIG. 3.

Same as Fig. 2. Note unfilled 3d molar.

teeth and not the gums, and if there is much bleeding of the gums to come and see you, as it is probably particles of tartar, or other pathological conditions present, or else the patient is not cleansing the teeth properly, and if the latter be true, show him at the chair how to do this.

I give each patient a tooth brush, having the last two rows of bristles cut off—the last three or four rows for a child. I show the patient how

to clean his teeth with his own tooth brush and mouth wash that I have prepared, and before he leaves my office I see him do what I have tried to teach him, correcting him where at fault.

I have purposely omitted referring to the use of tooth powder. This agent I should recommend to the use of the patient not oftener than twice a week, and the powder that I supply is as follows:

Pulverized Chalk	1 oz.
Carbonate of Magnesia	$\frac{1}{4}$ oz.
Pulverized Orris Root	$\frac{1}{4}$ oz.
Sweeten with saccharine and flavor to suit the taste.	

**Toothpicks
and Threads
Interdicted.**

As I have made reference to thread in the cleaning of teeth, I wish to put myself on record as saying that I am positively opposed to the use of silk thread on the part of the patient for cleansing the interproximate spaces, and to the free use of the quill and the wooden toothpick, as I believe these agents only serve as wedges in forcing the teeth apart, making unnatural spaces between the teeth that collect food and other materials destructive to the tooth and the tissues. Patients pick their teeth and saw between them with thread until their gums are bleeding, and is it to be wondered that they have pyorrhea and other pathological conditions of the gums when they are being repeatedly inoculated by these measures? I recommend a thin bladed gold toothpick, as I shall pass around.

In the case of lower animals, as the cats, dogs, etc., and also of the Esquimaux whose diet is almost exclusively meat, the percentage of decay is almost nil. This is owing to the fact that meat is acted upon by saprophytes, which are not acid-forming bacteria, and the result of saprophytic action is not a ferment, but an alkali.

I will pass around for your inspection teeth taken from the skulls of the mound builder and some from the Esquimaux. (Fig. 1.) You will notice in the case of the mound builder, whose diet was a mixed one, that the enamel is almost entirely worn off, and still there are no signs of decay such as would result from the growth of acid-forming bacteria on their surfaces. This, I take, to be owing to their mixed diet, which was composed of flesh and cereals. This food, as consumed, would contain large quantities of sand and other gritty substances which, in mastication, would rapidly wear the enamel and dentine, leaving smooth and polished surfaces; such a diet actually serving as tooth brush and tooth powder. This wearing away of the teeth of the aborigines has already been commented upon by Dr. R. R. Andrews, in one of his able essays.

**The
"Edge to Edge"
Occlusion.**

I was enabled through the courtesy of Professor Holmes, of the National Museum at Washington, to examine several hundred skulls of Esquimaux. I found them to have uniformly sound, well formed teeth, with hardly any decay, their surfaces polished white and smooth, without the cracks or pits noted in the Indians and mound builders. The teeth were quite free from tartar and other stains. The masticating surfaces were much worn, but showed no signs of the acid-forming bacteria. I found there in my examination of the skulls of the Indians, Esquimaux, and many other tribes where there was great abrasion of the teeth, that there was almost universally an edge to edge bite. (Figs. 2 and 3.)

This to me is a very important condition, inasmuch as it has been argued that the only normal articulation is where the anterior teeth of the upper jaw overlap those of the lower. I am inclined to believe that this edge to edge bite is one of the principal reasons why these people's teeth do not decay. There is not the leverage or the tendency to separate the teeth in mastication, as is seen where the teeth overlap, and for this reason the teeth are nearly self-cleansing.

**Diagnostic Value
of
Tooth Staining.**

I have spoken of teeth staining and of its vast importance in a diagnosis and prevention of decay. When enamel is partially decalcified, or imperfectly calcified, it takes stain quite readily. It is not painted, the tissue is stained just as the dentine and other structures known to be highly organic. Now I take the illustrations Figs. 1, 2, 8, 9, 11, 19, March, '97, *Cosmos*, given us by Dr. Williams, of partly decalcified and imperfectly formed enamel, where the rods show a tendency to separate, to show the presence of organic matter. In the case of the enamel section, which he states was partially decalcified by acid (see Fig. 37, *Cosmos*, April, '97), it is the cement substance, he says, that has been dissolved out, that which was once organic, but, according to his statement, now completely calcified, and the structure remaining must be then the inorganic lime-salts. Why the lime-salts are so resistant to acid, he does not explain.

I think he is entirely wrong, and that this illustration shows most conclusively the presence of organic matter that has not become completely calcified, and for that reason has been more resistant to the decomposing action of the acids than are the lime-salts. The separation of the rods as individuals, I believe, can be explained along other lines. We have been taught by our chemists and histologists that acids, when first applied to organic tissue, like nerve and muscle, produced a contraction and slight hardening, by the removal of a portion of the water from the tissues; this

process is termed hardening or fixing, practical use of which is made in preparing tissues for section under the microtome, etc.

The contraction and shrinkage produced by some acids is so great that the tissue loses in appearance nearly all of its natural characteristics. I believe we have a similar action present when the enamel is partially decalcified. (See Fig. 37, *Cosmos*, April, '97.) The acid causes a shrinkage of the organic matrix which, being more abundant between the rods than between the inter-globular bodies, we have the rods separating into individuals, as seen in Figs. 80-85, *Cosmos*, May, '97. Not because the cement substance has been removed, or the organic matrix destroyed, but because it is organic, it has remained quite insoluble to the acid and takes the stain, as does organic tissue in other portions of the tooth. Where the enamel of the tooth presents the most organic matter from imperfect calcification, or has the lime-salts removed so as to expose the organic matrix, we would have such enamel staining deeply. (See Figs. 1, 3, 5, 6, 7.) The aniline stains like methyl blue, eosin, carbo-fuchsin, etc., have been of inestimable value in tissue differentiation, and it has been almost entirely to their introduction and use that there has been such marked advancement made in histology, pathology and bacteriology.

No one can explain why the flagellum of low animal and plant forms, always stain so beautifully with eosin and carbo-fuchsin, or why the more highly developed portion forming the body proper, stains with methyl blue. But such is the case.

In staining sections of teeth by the rapid process, the deeper portion of the dentine from decay takes the eosin and carbo-fuchsin stains, while the decayed portion shows a deep blue. I believe the deeper portion stained with the eosin and carbon-fuchsin shows the depth of penetration of the acid, and the portion stained with the methyl blue shows the presence of bacteria and other organic structures.

I believe the teeth are sensitive principally because acid has dissolved out the lime-salts protecting the nerve fibrils. The first effect of acid we have learned is a shrinkage, later, if the tissue still remains in the acid, it becomes swollen and gradually decomposed. But this does not occur until long after the inorganic salts have almost disappeared. With these little nerve filaments, exposed and swollen, so tender that the slightest touch produces excruciating pain, is it to be wondered that our patients seek out those purporting to do "Painless Dentistry?" The treatment of the sensitive dentine, therefore, will depend upon the chemical reaction. If it is due to the action of an acid, use an anti-acid, and for this I know of nothing better than water of ammonia, or a saturate solution of carbonate of potassium in glycerine, as recommended by Dr. Foster Flagg. Follow

this with a blast of warm air saturated with ether and absolute alcohol. This will dehydrate your tooth so completely that, in many cases, you can remove all the decay necessary, and that, too, painlessly. If you now choose to apply cataphoresis, use a solution of cocaine, slightly acidulated with sulphuric acid, and you will be more than pleased with the result. Cataphoresis, I believe, owes its efficiency to the electrolysis of the water in the dentine, producing a partial disintegration of the tissue, making it porous and better able to absorb the cocaine, but of this I shall speak in another page.

**Erosion
Explained.**

Drs. Black and Williams lay claim to priority in giving the correct solution for enamel disintegration, but with all their absolute knowledge they have not explained erosion. As this certainly is of vast importance I desire to venture the following: From my clinical experience I am inclined to believe erosion results from the removal of both the organic and inorganic matter from the enamel and dentine. From my experiments I believe this is partially accomplished by the saprophytes and other fungi. I trust to shortly present some evidence for this statement.

I have found evidences of erosion in the teeth of many of the exclusive flesh-eating animals, and for that reason, if for no other, I would partly ascribe it to saprophytes. I rarely see decay and erosion on the same tooth acting at the same time. The surfaces are smooth, polished, glistening and extremely sensitive. I have used the same treatment recommended for sensitive dentine, previously explained in this article, and have depended in the molars mainly on nitrate of silver, using chloride of gold and formaldehyde for the anterior teeth with excellent results.

Where the loss of tissue has been very great, as on the labial and buccal surfaces of the bicuspid and six anterior teeth, I have removed the tissue for considerable extent and inserted natural inlays of enamel or porcelain. The appearance is much more beautiful than gold. Gold used in such places is not artistic; it is hideous.

[The author acknowledges his indebtedness to Dr. Black for the use of some of his histological sections from which were made some of the photo-nuerographs illustrating this paper, also to the able assistance he has received from Drs. Noyes, Broomell and Andrews on the preparation of many of the photo-nuerographs used in illustrating this article.]

List of Early Dental Writers Criticised and Corrected.

By WILLIAM H. TRUEMAN, D.D.S., Philadelphia.

Looking over the list of early dental writers introduced on page 873 of the November *ITEMS*, 1898, I note with regret that, not only has it been compiled, without any correction, from an old and imperfect bibliography, but in the transfer many new errors have been introduced. As that list will be seen, undoubtedly, by many who have given the matter but little thought, and who may not have at hand data for its correction, I beg leave to point out some of its errors and to suggest more reliable sources of information than that from which it has been derived.

It is very probable that F. Maury, the author of "*Traité Complet de l'art du Dentiste*," published at Paris, 1828, took as the basis of his "Alphabetical table of some authors who have written upon the art of the dentist, or upon some one of its parts," found at the end of the volume containing the text of that work,¹ a previous one published at Leipsic, about 1793, correcting it to date. He suggests at its close that, while care has been taken to make it complete, it very probably contained some errors and that some works of importance had been overlooked. No change was made in this list in the edition of 1833, the edition I presume Dr. Xavier translated; unfortunately, the date of the original editions from which they were made is omitted in, I think, all of the translations made under the auspices of the American Society of Dental Surgeons, of which this is one. In the translation, few, if any of Maury's errors were corrected; the translator added, however, the supplemental list on page 877.

As found in the various editions of Maury, including the translation, with the name of the writer is also given the title and date of his works, making the publication far more useful and instructive.

At its best, such a list, embracing as does that in the *ITEMS*, without any means to distinguish them, the names of men famous for original research or of ripe experience like Eustachius and Fauchard; young medical graduates whose only contributions have been their inaugural theses, for the most part made up of quotations from their text-books; mere advertisers, on a par with the least reputable of those who run the modern dental parlors of our large cities; and others, who have been noticed in dental bibliographies for no other reason than that the word "teeth," or its equivalent, appears on the title page of their works, and whose writings have

¹ The plates, forty in number, in the French editions of 1823, 1833 and 1841, were published by themselves in a separate volume.

no closer relation to dental science than has Mr. Grimshaw's excellent treatise upon the teeth—*of saws*, is of questionable usefulness. When, however, it contains so many errors as are here found, it loses completely its educational value and becomes pernicious and misleading.

Among the errors added in the transfer of the list from the translation of Maury to the *ITEMS*, and perhaps the least important because they are mostly those of obscure individuals, are the following mis-spelled names: Auvity, Auzebi, Botot, Brouwer, Conring, Devaut, Dubois de Chemant, Geoffroy-Saint-Hillaire, Goblin, Grousset, Heslopp, Hoffmann, Jourdain, Lemaitre, Loeselius, Ludolf, Marmont, Monavius, Timaeus, Troubat, Vacher, Vauquelin, Zakbockjen and Ziegler.

The names of towns, as given; some being mis-spelled; the use of unusual abbreviations for others, and in some cases the omission of the period; and giving some places a variety of names will, to most readers, prove very confusing. For instance, Halle, appears as Hal, Hales, Haley, Halie and Halae; Florence, as Fior and Fiornza; Erfurt, as Erf, Erfordia and Erfort; while such names as Alart, Edmb,² Pub, Lips, Tul, Tub, Ultr, etc., look very much like printers' pie.

Were these names accompanied, as they are in the work from which they were compiled, with an abstract of the title page of the works credited to each writer, in the language in which they wrote, or in which their writings were published, we would have, provided they were correctly given, some clue to the meaning of these names and abbreviations. In a list like this, prepared for English-speaking readers, the names of these towns should either have been translated so that they could be understood, or should have been omitted altogether. A Latin scholar, or one versed in book lore, may readily recognize in Venet, Venetijs, or in Ludg. Bat. (Lugdunum Batavorum), and other capricious renderings of these words upon title pages, etc., modern Venice, or modern Leyden; they are not, however, good English, or generally understood. While the place of publication may serve to identify a particular edition of a work, what has it to do with a list of writers upon any particular subject? Is it not of more interest to know when and where they lived? Eustachius lived at Rome, Lecluse at Paris, Koecker made his reputation in London; regarding this the list is misleading as to some, and uncertain as to others.

The dates there given do not in any case indicate when these men were born, or when they died; nor yet can they be depended upon as the date of their first, or their most important, or their last work; nor yet in all cases when they lived. They sometimes stand for one, sometimes for the other, and sometimes neither for the one nor the other. For instance:

² Edimb and Edmb are abbreviations of Edimbourg—French for Edinburg.

Lemaire, 1812-1816. The first date refers to a little work for popular reading, "The Ladies Dentist," the second to an insignificant pamphlet of a few pages. We would naturally infer, from the data given in this list, that his work as a dental writer was completed at this latter date, and thus be, by an inexcusable blunder of the compiler, misled. The two important works upon which Lemaire's reputation as a dental writer securely rests, his translation of Fox on the Teeth, and his own three-volumed work upon the Physiology and Pathology of the Teeth, were published between 1821 and 1824. "Fauchard, Paris, 1786," is an error of Maury's that should never have been allowed to pass. Fauchard wrote "The Surgeon Dentist, or a treatise upon the Teeth," in 1728; it was translated into German in 1733; the second edition in French was published in 1746; he died in 1761; 1786 is the date of the last edition, published long after his death. "Dubois, De C., Paris, 1789-1824," is a stupid blunder as well as an apt illustration of the little value of such a list as this. Four times in the paragraph from which this was culled the name is correctly given—"Dubois de Chemant;" he himself preferred to make it M. Nicholas Dubois de Chemant; it may be correctly shortened, and frequently is, to M. Chemant, or Dubois de Chemant; Chemant was the family name. From the dates given one would infer that this man had contributed largely to dental literature. The only volume credited to him lies open before me; it had many editions between the dates named. He claimed the credit of introducing porcelain dentures, and wrote this little book to advertise and support his claim, and to advertise his business. Permit the quotation of a single verse of a poem it contains:

"Well vers'd in wisdom's lore, he makes
The *utile* and *dulce* meet,
It's his the highest pitch of art
To blend the useful with the sweet.
When time has stripp'd our armory bare.
CHEMANT steps in with subtile heed:
New grinders and new cutters gives;
With his we laugh, with his we feed,
Long live CHEMANT, our friend in need."

This little volume, and a series of letters or pamphlets, defending his claim, or for advertising purposes, dated from either Paris or London, are all that this man contributed to dental literature during the long period between 1788 and 1826. For further information regarding him and his connection with the adaptation of porcelain to dental uses, see Joseph Audibran's history of this event; a name and a work, by the way, that has

no place in this list, and for the other side of the controversy, J. C. F. Maury's little book on the same subject.³

Without being over critical, there are some fifty errors in this list, not counting the misleading or meaningless dates. To attempt to correct them all, short of rewriting the entire list, is a hopeless task. I cannot do better than refer those interested in the matter to the excellent Dental Bibliography, or Standard reference list of books on dentistry, published throughout the world from 1536 to 1885, compiled by C. George Crowley. While not free from errors, and not as complete as it could now be made, it is by far the best I have seen, and so conveniently and so compactly arranged that the title, writer, and date of anyone of the more than two thousand works noticed, or the date and title of all the works of any one writer, may be readily found in a few moments. Since the publication of this work there is no excuse for perpetuating the errors of earlier writers; indeed, anyone, having regard for accuracy, would do well to closely scan and question many of the items regarding early dentistry and early dental writers floating around in our text-books and periodicals. A few minutes spent in comparing this list with, and correcting it by those found in other publications;⁴ and a little more care and judgment in its preparation, would have placed it beyond criticism, and made it a valuable reference list. As it stands, it should best be ignored.

Dental Examining Boards Criticised.

By M. H. LUTZ, D.D.S., Fairmont, W. Va.

It would seem from an examination of our late State Dental laws that dental colleges are mere speculative institutions, whose diplomas are little more than credentials recommending the bearer to some ignorant, selfish board of dental examiners (which credentials are not at all essential). Such State dental laws as now exist throughout the United States certainly are a reflection on our colleges, since few, if any, of the States recognize the diplomas of any of our colleges as sufficient evidence of the

³ *Traité Historique et Pratique sur les Dents Artificielles Incorructibles.* Par Joseph Audibrant Paris, 1821.

Manuel du Dentiste, pour l'Application des Dents Artificielles Incorructibles. Par J. C. F. Maury Paris, 1820.

⁴ Of the older dental bibliographies, that in Fitches' *System of Dental Surgery*, either the edition of 1829 or that of 1835, is perhaps the most accurate and complete. He has translated the foreign titles, thus making it more instructive to English readers.

- ability of the bearer to practice dentistry. It is my honest conviction from years of experience that a more truthful display of the headlines of our dental laws than "An act to prevent empiricism upon the people," would be
- "An act to protect the dentist in his imposition upon the people." If our college faculties are not capable of determining whether or not certain individuals who have toiled and studied under their direct supervision for
- a college term of three years are not competent persons to practice dentistry, is it to be supposed that three or four dentists of any particular State (laying aside any selfish motive) would be?

We must deal with facts which do exist and not with conditions which do not exist, and it is a fact that dental examining boards have vested in them the authority to refuse any applicant a license to practice dentistry, no matter what his ability may be, since dental examining boards are not confined to any text-books, but have authority to ask such questions as they individually choose, and cannot have the slightest knowledge as to the genuine ability of the examined, as their examinations are conducted at the present time. Dentistry is a mechanical art. Since this mechanical art is practiced on the human body, it is highly essential that the practitioner should have as thorough a knowledge of the human body as possible, or, speaking from a mechanical standpoint, he who presumes to keep a certain part of a great machine in repair should have a fair knowledge of the whole machine, since all parts must or should work in harmony; however, a dentist is not a physician, nor is there any need he should be. The idea that a creditable examination passed by any applicant upon physiology, anatomy, pathology, chemistry, therapeutics, etc., renders him a fit person to practice dentistry is simply preposterous. I say, let us

- have high art and genuine skill rather than a bungling scientist, whose only passport to the field of dentistry is an ability to name the ribs, muscles, nerves, etc., of the body, and who cannot even mix a bowl of plaster of paris, and do it properly. The dentist who is a mechanic is, after all, the successful and most useful man to the community in which he lives. What matters it to the patient whether the dentist can tell him all about the nerve of his great toe or the length of his small intestine or not, if he can perform his duty upon the teeth perfectly.

**Practical
Examinations
Advocated.**

I would not for a moment have any brothers think I would drop from the profession that knowledge of the human body which is really necessary to the intelligent practice of dentistry, but I would ask him and the profession at large to stop and think, and if we must be examined by State dental boards, let us compel them to examine us practically. What business have I or you, my brother, to cut, saw, hack and destroy the teeth of our patients through lack of genuine

mechanical skill, just because some indulgent dental examining board says that we know a little anatomy, physiology, chemistry, etc. After all, it is my experience that the average dentist knows about as much of chemistry as a hog does about skating; and I have had ample room for observation, since I have visited over eight hundred dentists within the past two years, and I am sorry to say that very many of them could not make even a decent rubber plate. Some few boasted of the ability to insert good gold fillings. All dentists should be able to insert good gold fillings and also to perform other mechanical operations well. Yet, the fact is that many are neither mechanics nor educated scientists.

During my travels as a teacher of dental specialties, in an humble way, I have frequently been officially called upon to undergo an examination before some State dental board, *but not in one instance was I ever asked to perform any dental operation whatever before any dental board.* Each member of the board had a list of questions upon his subject, which were particularly indicative of the individual, from the absence of good orthography, and never have I come before any board of examiners who were all graduates of dentistry; yet the colleges and profession at large permit such laws to be enacted and carried into effect, thus falsifying the true meaning of the profession of dentistry. My object in this little article is to draw out the sentiment and feeling of the profession, in regard to our dental laws, and to get the honest opinion of honest men, honestly expressed, and, if possible, to arrive at some conclusion that will give us better dental laws. Laws in which all shall have an equal chance, and each individual stand on his own merits as a dentist, regardless of petty State dental laws, or selfish and unscrupulous examining boards.

Some Office Hints for the Younger Men.

By Dr. T. LEDYARD SMITH, City of Mexico, Mex.

Uses for
Glass in
Dentistry.

To quickly, neatly and effectually melt a bulk of wax for immediate use in the mouth, or elsewhere, melt the wax in a tin dish and pour it on a pane of glass, afterwards scraping it up into bulk form with a suitable spatula, when it has cooled to your liking.

The wax should be kept ready in a small tin dish, which may be heated over a spirit or gas lamp, and a pane of glass should also be kept on hand for this use. This manner is cleaner and quicker than the hot

water or dry heat method, and the wax will have one uniform consistency. Sheet wax can be made in this way as well, first soaping the glass, that the wax may not adhere to it.

Another use for glass, is to prevent odors of medicine arising in the office, the very thought of which often sickens children—young and old—against a second dental visit. Keep bottles containing oil of cloves, carbolic acid, local anæsthetics or other objectionable drugs, on a plate glass slab, and over each bottle invert a wine tumbler.

In my office I have what was made for a carving dresser. It is a handsomely carved piece of furniture, with a large flat top and drawers and closets underneath, made of oak, thus matching in wood and finish the Harvard instrument cabinet by its side. The top of this case is waist high, which is not so high that one must reach up for things, nor so low that one must stoop. Its top is covered with a thick French glass plate, on which are all the bottles, within reach of the right hand and ready for use, all of one design, big necked, and each stopper having a paper disk on which is printed the contents.

This glass plate is a ready place to catch all unclean articles, such as broaches, forceps just used, and other instruments that get soiled and which must be put down somewhere quickly. It is also convenient at times for mixing cement on—an operation that should not be limited to an unsteady little piece of glass or porcelain. This plate of glass retains no odors, will not stain like a marble top, can be washed in a minute, and affords the operator no opportunity to be unclean.

Watch crystals are very convenient for using medicine from in small quantity, where one does not wish to redip in the bottle, and they are also handy to catch pellets of cotton from the tweezers. They are easily washed, and nothing equals glass for cleanliness. To afford the best service they should be set in a lead stand, thus: on a sheet of lead describe a small circle, and from this mark outward four arms three-quarter inches long and three-sixteenth inches wide, regularly spaced apart. When this is cut out, you will have a flat, round base of lead with four projecting arms which may be turned upward in such manner as to hold the crystal, turning the end of each arm over the edge in the same fashion as a diamond is caught by its setting. A number of these can be quickly made, and may be given the same neat finish with which dentists do all things. The leaden base gives them stability, and the arms may be bent outward when necessary to release the crystal for washing.

**Usefulness of
Watch Crystals.**

Electro Deposition of Metals.

By DAVID AIKEN, D.D.S., Winnsboro, S. C.

To reply briefly to Dr. Wilson's article in February ITEMS OF INTEREST, I can only say that I am none the wiser after reading it, so far as concerns a better knowledge of his methods in detail.

If it is intended as a reply to my criticism of the previous month, then it is in every sense, irrelevant to the point at issue.

He explains nothing—simply gives some directions for the management of a plating bath, some of which are true and some are not; and attempts to describe the several parts of a cell, the cathodes, anodes, etc., all of which is familiar to any schoolboy who has a text-book on Physical Science.

The fact of his having sent specimens to the Museum in Washington, conveys to my mind no comprehension of his methods, nor do they enlighten any one who may chance to see them and who is seeking information in the line of electro-metallurgy.

If the first radiograph had been sent to some museum accompanied only with the statement that it had been made in a stated manner, and without any explanation of the phenomena governing its production, or without a subsequent demonstration of the same, the world today would be none the wiser, nor as yet have given credence to a statement so unlikely, but with its characteristic incredulity, would have looked with eyes askance at even so great a man as Prof. Roentgen, and likewise, the dental profession may yet look with eyes askance at so remarkable a man as Dr. Wi—oh! well, never mind—suffice it to say, 'tis a good rule never to make an assertion that you can not prove.

It will be noticed that my friend, Dr. Wilson, in his description (?) of an electro-deposit filling, speaks of it as a "mysterious" process. Indeed I agree with the gentleman, and that it will ever remain a mystery to the profession, if it is left for him to demonstrate it, is beyond the peradventure of a doubt.

I think it should not be left for me to disprove his statements, but for him to prove them, and thereby set at rest any questions as to doubt that may arise. Unfortunately, however, he never has and never will give a demonstration of his process before any intelligent body or individual of the profession.

If such results as he vouches for could be accomplished, then he need no longer live by the sweat of his brow, but he could live perched upon the highest pinnacle of success, with an eye single to his own glory.

The subject of electro-metallurgy is one of such great detail that it can not be dealt with in few words, otherwise it would gratify me to outline the principles involved in its general application, for by so doing I could easily demolish the statements that have been made, which have necessitated the writing of this article.

As I say, to do this would require much time and labor, and I would not feel justified in inflicting upon the readers of this journal a dissertation upon a subject in which perhaps few of them are interested.

I will say this much, however, that by the usual methods of plating with the best double cyanide solution, proper current, temperature, etc., and in fact, under the most favorable conditions, it would take six or eight hours' steady work, with constant watchfulness and manipulation, to deposit a coating of gold heavy enough to be of any practical value other than as a coating for some other metal, and it would be useless even then, if heat was applied (as per the Dr.), of sufficiently high temperature to fuse the baser metal.

Gold thus deposited is always more or less in a disintegrated state, due to molecular change, and in fact, all metals so deposited are in a state so attenuated, that a heat of moderate intensity will cause them to volatilize easily. In fact, I might say by way of analogy, quite as easily as his theories will volatilize by investigation.

As a parting word to the doctor, let me suggest that he reinforce his gifts already in the museum, by the addition of others of more questionable usefulness, which would be his several communications in the *ITEMS OF INTEREST*—suitable donations to any museum as typical specimens of antiquated and "busted" theories.

A Case of Tertiary Syphilis.

By H. G. DUNBAR, D.D.S., Stellarton, Nova Scotia.

The following case of tertiary syphilis may prove interesting to the profession. The lesion was in a woman, age about forty-two, married, and was first examined by me in October, 1898, and at that time presented the following features:

**Syphilitic Lesion
of
Upper Maxilla.**

The superior left first and second bicuspid's had been extracted in 1895, followed by no particular occurrences, and the parts healed in the ordinary manner. When the jaw was examined, it was found that the gum, alveolar process and periosteum, which

should have extended from the cuspid to the first molar, were entirely absent. The bone in this locality was necrosed, discharging pus. The cheek could be drawn out and a probe passed up between it and the outer plate of the bone, to the infra-orbital ridge. The left cuspid, lateral and central were somewhat loose. Near the locality of the socket of the first bicuspid, a probe could be readily passed up into the antrum, from which pus could be drained. There was little sensation in any part of the bone or gum in the immediate vicinity, and no bleeding or irritation.

The patient was not cognizant of any pathological changes taking place until about two weeks before the case was first examined. At that time a swelling occurred on the gum between the cuspid and first molar. It soon broke and discharged. A quantity of the pus was collected in a test tube, and was submitted to a microscopic examination for traces of the bacilli of tuberculosis. None were present. At the next visit inquiry was made into the patient's history, when the true state of affairs became evident.

About four years before, the patient had pustular eruptions on the arms and legs, some of which broke and discharged. At or near this time she also had swellings of the glands of the neck, accompanied by sore throat. These symptoms in time abated. About one year ago she was afflicted with terrible neuralgic pains in the head, and finally small nodules made their appearance on the skull. Portions of the patient's hair began to come out. A short time after this she had a premature delivery. The patient had, for some time, been under treatment, but evidently had been treated for the symptoms as they had occurred. The treatment of the case after it was presented in October, and its subsequent history, is as follows:

Treatment of Syphilitic Necrosis.	A medical practitioner was consulted, and the patient was put on an anti-syphilitic course of treatment. The part affected was also washed out with hydrozone, 1 to 6, three times daily to keep free from pus, and twice daily with a solution of scale pepsin in nitromuriatic acid (dilute) to assist in the formation of a sequestrum. The part was kept packed with iodoform gauze.
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In one week's time the piece of necrosed bone began to come away, and in two and one-half weeks the piece was removed *en bloc*, and the cavity washed out. The piece removed was probably one and one-half inches long by three-quarters of an inch wide.

The cavity was syringed out three times daily with peroxide of hydrogen, and packed with the gauze. Granulations soon began to form and the parts took on a more healthy aspect, and at the time of writing there is no discharge and the cavity rapidly closing.

A case like this serves to impress on the mind of the practitioner the

absolute necessity of strict adherence to the principles of modern anti-septic dentistry, not alone with regard to the instruments, but the operator and field of operation as well. It is not a rare thing for the dentist in his daily practice to meet this dread disease in some one of its forms, and it is a duty he owes to himself, his patient and the profession, to render the most good with the least risk.

The ease with which this disease may be transmitted, and the difficulty with which it may be eradicated, should be factors ever present in our minds, acting as stimuli to individual effort toward prophylaxis in dentistry.

Some Effects of Tobacco in the Mouth.

By THOMAS A. MAYHEW, D.D.S., Wellington, Kansas.

The newspapers state that the area for the cultivation of tobacco is yearly becoming greater, and living in a community where seventy-five per cent of the male population use chewing tobacco, the habit has been called to my attention by almost every patient who seeks the dental chair.

The following seeming facts, I have culled from my notebook, and it may be of interest to record some of its contents, as in it I kept a record of its users who come under my observation: age, the amount they use per day, their favorite brand, the length of time they have used it, and its effect on the oral cavity from my point of view.

In the examination of the mouths of men between the ages of thirty-five and forty-five, eighty per cent of the best-conditioned are users of the weed.

That the destructive force of caries that existed previously to the chewer becoming habituated, seemingly has come to a stop, and the tooth structure does not disintegrate as rapidly as before;

That, as a rule, users do not suffer with toothache to any great extent; that the absorption of tobacco stain causes tooth material to become immune, making it insoluble by acid ferments;

That it causes an increase of saliva, and a frequent flushing of the oral cavity;

That the damage it does to the user in the mouth, is its effect on the tissues surrounding the teeth; it causes the gum to become thickened, highly inflamed and angry looking; that the teeth become loosened—especially the roots of the molars become almost entirely denuded of gum tissue, while the crowns are worn down until such a thing as cusps cannot be distinguished;

That its action in numerous cases seems to be that of a mild caustic, as the mucous membrane is in the same condition as if the mouth had been washed out with carbolic acid; of a dirty white in color dotted with red patches, and, in many cases, almost entirely insensible to pain.

In large cavities I have frequently exposed the pulp, and have found on inquiry that it caused little or no pain, and although the carious portion was extensive, the tooth had never ached, causing the thought that the "weed" contained anæsthetic properties.

Orthoform.

By A. D. KYNER, D.D.S., Blue Mound, Ill.

I have failed to notice any reports in the dental journals* about orthoform (new), and having had much gratifying results from its use in several specific cases that have heretofore been treated with poor success, I thought it might be of interest to note where it will prove a "blessing in disguise."

Orthoform is but slightly soluble in water, and for this reason is due its great value, as its anæsthetic action is prolonged for a number of hours. As a local anæsthetic it is equally as potent as cocaine, and being practically non-toxic it can be used with absolute safety.

Another and important virtue of the drug is its ability to permanently constrict the vaso-motor system, for which reason it is especially adapted to localized inflammations.

Some writers attribute antiseptic qualities to the drug, as ulcers, etc., heal when treated with it. This has not been fully confirmed, but it is certainly non-irritating. Its use is indicated where nerve terminals are exposed. Upon an unbroken surface it has but slight effect. There are two things that it will do that will recommend it to everyone. First—Packed as a twenty-five per cent lanolin unguent, into those deep, painful pyorrhea pockets, it will stop the pain and remain in that condition for from twelve to forty-eight hours. Think how gratifying it is to feel that your patient can pass through a night of comfort relieved from those pockets that persist in aching at night, when the vital forces are at their lowest ebb.

Second—after pains of extraction—those troublesome aches that come and live with you in your office. Hot and ice water, carbolic acid, oil of cloves and chloroform, etc., fail. Cocaine keeps them away for half an hour. Clean out the cavity and dust with orthoform, seal loosely with cotton, and the sufferer will be relieved for from six to twenty-four hours, and it is rarely ever necessary to make but two applications.

* See page 204 of this issue.—EDITOR.

Arsenical Poisoning**Cured by
Orthoform.**

I had a case of acute arsenic poisoning with the conditions present so familiar to all. With spoon excavator removed the blackened gum tissue, syringed parts with warm antiseptic solution, soaked gum and surroundings with dialysed iron and applied twenty-five per cent unguent orthoform. The pain in this case was the severest I ever saw, and I must admit being astonished when the patient returned on the following day and reported that the pain stopped and had not returned. Relief came within twenty minutes.

I hope to hear from others about this sovereign remedy, and believe that my experience with it has been sufficiently extensive to justify my assertion that it should be in every dentist's cabinet.

On the Use of the Watchmaker's Eyeglass in Dentistry.

By DR. STEWART J. SPENCE, Harriman, Tenn.

If the value of an instrument should be measured not by its high price nor complicated structure, but by its everyday usefulness, then the humble little tool whose virtues I am proud to champion would, I venture to assert, outvalue some of our thirty to fifty dollar appliances. I refer to the magnifying eyeglass used by watchmakers.

Of course dentistry is familiar with the ordinary magnifying glass which is sold in the depots and meant to be held in the hand. These are undoubtedly much better than nothing. But as dentists are not blessed with three hands, their utility is very much limited. What we need is a glass which can be used while in the act of operating, and, also, one which can be inserted some distance into the oral chamber. The watchmaker's eyeglass supplies this need. I have frequently held mine to the eye during the whole time of the excavation of a cavity or the insertion of a gold filling.

On dark days, and when the shades of night are beginning to fall, and when the eye has become fatigued by being focused long on one small spot, and when you want to see more clearly what you are doing in an obscure posterior cavity, and when you are drilling retaining points, and when you are malleting the last pieces of gold along the margin of a cavity, how good and pleasant it is to be able to place one of these little instruments to your eye and see things clearly!

It must be admitted that it is not altogether pleasant to a novice to hold his glass at his eye for any considerable length of time. It requires some experience to do this without conscious effort. For such cases,

there are glasses made with a spring attachment to go around the back of the head. But my experience with such assistance has been that it interferes somewhat with one's pointing the eyeglass just where one desires.

A more serious difficulty is, that the focus of the watchmaker's eyeglass is such as brings the dentist's face a little too close to that of the patient. But this can be remedied, and at the same time a somewhat enlarged magnifying effect obtained, by removing the lens from the frame (which is easily done after heating the vulcanite) and extending the frame outward about an inch and a half by adding to it a cylinder of aluminum, attaching the lens to the distant end of this tube and telescoping the nearer end into the vulcanite frame.

Watchmakers say that the eye that is used with the eyeglass is stronger than the other.

**High Power
Lenses.**

There is another eyeglass used by watchmakers which is almost as useful in dentistry as that which we have been considering. I refer now to one the lens of which is only about three-eighths of an inch in diameter, and the magnifying power about four times greater than that of the other. This one cannot be used by dentists at the eye, because its focal point is only three-fourths of an inch from the lens, but, of course, the eye can be placed at almost any distance from the glass, and thus the instrument can be used even when thrust far into the oral chamber.

I employ this higher power extensively in detecting those very small approximal cavities which cannot by the naked eye be distinguished from discolorations, and also for examining the margins of cavities before and after filling; for examining a suspicious sulcus; for detecting cracks in enamel, etc. By this means one can see whether his approximal gold filling is sufficiently dressed down, and whether there is a flaw at its gingival margin. With the electric mouth lamp on the inside, and this little lens on the outside, you can see right through an otherwise obscure approximal space, detecting an incipient decay or the slightest defect in a filling.

As the attempt to focus this eyeglass on a posterior molar meets with difficulty, because the vulcanite frame and the operator's finger tend to throw the tooth into the shade, therefore the greater portion of the vulcanite frame should be sawed away, leaving only a narrow ring of vulcanite to encircle the lens. To this ring should be attached a handle, which should be inclined to the major axis of the lens about forty-five degrees, or, preferably, be made adjustable.

These watchmaker's glasses are also very helpful while grinding the joints of gum teeth. Altogether I have found their use one of the biggest little things in dentistry.



What We Need in Artificial Teeth.

By ALLISON R. LAWSHE, D.D.S., Trenton, N. J.

Read before the Second District Dental Society, November 14, 1898.

Our porcelain teeth are approaching to the dignity of imitators of Nature's organs, yet they are still far from the goal of faultless imitation. A chief need now is for teeth which shall more nearly approach Nature in shade than any now offered us; the cuspids should be darker, the bicus-pids and molars less uniform. It is this uniformity—this glaring sameness—of color more than any other factor, aside from the picket fence appearance of the sectional block, which makes our artificial dentures so conspicuously artificial when placed into the mouth. And this is true of both the plain and the sectional block teeth.

Uniformity of color of the dental organs belongs to youth. We but seldom find it in middle life, and never in the elderly subject. On the contrary, variations of shade are so prevalent in the middle and latter parts of life, that the condition may be said to form one of the characteristics of old age present or approaching. How ridiculous, then, to place into the mouth of a middle-aged or an elderly subject a set of teeth as beautifully uniform in color as the denture of a youth of twenty!

We may select for our subject plain teeth of the best shade and shape obtainable; we may arrange and rearrange them till we think we have counterfeited Nature; we may fill out the shrunken lips and make plump the hollow cheeks and yet, when we stand back and look at what we have done we know there is something wrong—something out of harmony. And what is it? On account of their beautiful uniformity of color our artificial teeth do not match the wrinkled face nor the gray hair.

We need, then, teeth which represent age; teeth stained somewhat as certain amalgam fillings stain; teeth discolored somewhat as dead pulps discolor; teeth altered in shade as caries alters. We have teeth that represent temperament; let us now have teeth to represent age.

Inflammations of the Gums.

By W. W. BARNES, M.D., D.D.S., Louisville, Ky.

Read before the Falls Cities Dental Club.

There is no service so little appreciated by our patients and of so little remuneration to us as the care and attention we bestow in the treatment of the diseases affecting the gums. So much so is this the case, and so ignorant do we find our otherwise intelligent patients in regard to these conditions, that many of us give only casual care, knowing if we go further that our object will be misconstrued and our solicitude will be taken for a desire to collect a fee. In looking over the whole field of pathological conditions affecting the teeth we find none that so completely puzzles our ingenuity and taxes our skill as that class that has its beginning in the gums and what is carelessly referred to by the family physician as "Inflammation of the gums," and who from his ignorance of their destructive character tells the patient, "Oh, it amounts to nothing," but which we know, if allowed to run its course without the care of a specialist, passes into a chronic condition, affecting deeper structures, which means not only great suffering for the patient, but complete loss of the teeth.

It is my object here to call your attention to some of these diseases that better and more careful treatment may be discussed, which will redound to the advantage of patients and a fuller remuneration to us.

Under the head of inflammation of the gums, I shall confine myself to those known as the calcic, mercurial, syphilitic and phagedenic. In my experience these four classes of inflammations, though so widely different in their origin, as well as type and character, if not treated properly in their incipency or acute stage, result in the same chronic conditions that will end in the total destruction of the tooth connections with its bony socket. The acute and chronic forms are well marked, if we study them from the destruction they have made of the tissues, rather than the time the disease has lasted. I claim that all inflammations of the gums resulting from the causes enumerated above are acute, though they may have lasted for years, if the dental ligament is not destroyed thereby; but, as soon as the dental ligament is destroyed resulting in destructive osteitis in the thin alveolar process protected by this ligament, we have a resultant chronic condition though the inflammation may have been noticed but a few weeks. Although the teeth and peridental membrane are nourished by the dental blood vessels that enter the apical space, I conceive that the

most vital nutrient vessels, the real life of the peridental membrane is through the blood vessels that supply the dental ligament, formed as it is by the union of the peridental and periosteal membranes. Thus, it is to my mind the most vital structure that protects the tooth and which I first look to in diseases affecting the gums.

In speaking of the four types of inflammation mentioned I am aware that much more could be said on either one than I will give you on the whole, but my object is not to treat specially each class, but to show that the types, though so widely different in their incipency and origin result in the destruction of the usefulness of the teeth in exactly the same manner, viz., by a rapid or slow inflammation in the gums, followed by a suppuration that results in the breaking of the connection between the peridental and periosteal membranes, thereby completely and irreparably destroying the most nutrient vessels that nourish and vitalize the peridental membrane, this most vital connection between the teeth and the rest of the human economy.

Calcic inflammations have their origin entirely from external causes—the calcic deposit around the necks of the teeth, which if taken in its acute stage is susceptible of complete and radical cure and gum repair; but when neglected till the inflammation has extended to and destroyed the dental ligament, it becomes what I term the chronic form, when cure and complete recovery never take place. Though the progress of destruction is usually slow and almost painless, especially when we can give paliative treatment, loss of the teeth will eventually occur from the destruction of the nutrient blood vessels that supply the peridental membrane through the dental ligament.

**Mercurial
and Syphilitic
Inflammations.**

The mercurial and syphilitic inflammations are from constitutional causes alone and mark the effect of medicine or disease upon the general system. This class of inflammations, though the most rapidly destructive in their onset, if taken in the acute stage are easily managed by proper constitutional and local treatment with almost certain cure and complete recovery; but if allowed to pass into the chronic stage through ignorance or neglect, the mercury may be discontinued and the syphilis cured, but the teeth will eventually loosen and drop from their sockets. Paliative treatment is of much good, but, as in inflammations of calcic origin, we have the same destruction of tissue, though more rapid and painful. In these cases the gums around the necks of the teeth will never heal, reunite with the teeth or take on the original festoon formation, but instead, pockets will be present, more or less filled with pus, gums.

spongy and gradually growing less, till, from lack of vitality in the periodontal membrane, the teeth are lost.

**Phagedenic
Inflammations.**

In phagedenic inflammations, or, as some call it, pyorrhea, others scurvy, and which was early known as the "disease of gum boils," we have a condition to my mind arising solely from constitutional cause, nearly always in a chronic stage from its very onset, or at least when we first recognize the disease. The beginning is either in the periodontal membrane or dental ligament and periosteum covering the alveolar process and never originates in the margin of the gums as in the calcic, mercurial and syphilitic inflammations. But we find its results the same, though more painful than either of the foregoing; it is because the disease attacks deeper structures and the pus has not the free vent as in those inflammations that attack the free margin of the gums. This variety may be more rapid in its destruction than the other three, but I doubt it, for after the dental ligament is destroyed I attribute the rapid or slow progress more to the care bestowed and constitutional condition of the patient than to the cause originating the disease.

I have written this brief paper to call attention specially to the great importance of the union of the periodontal and periosteal membranes forming, as they do, the dental ligament, and the necessity of its preservation by the proper treatment, as I place it paramount to the pulp of the tooth.





Central Dental Association of Northern New Jersey.

December Meeting.—Discussion of Dr. Hart's Paper.

When in 1891 Dr. Stebbins read his well known paper on "The Use of Nitrate of Silver in the Treatment of Deciduous Teeth," some of the older practitioners, among them Dr. A. M. Holmes, of Morrisville, N. Y., informed us that they had used it for twenty years or more, in a similar way. The result was clear to the men who employed nitrate of silver, but its action was not explained until Dr. Stebbins informed us, that the well known action of the nitrate of silver, which not only discolored albuminous substances, but formed with them insoluble compounds, was undoubtedly the cause of its arresting decay. A truly scientific explanation of the action of these coagulants, in connection with dental decay, has not been attempted, until Dr. Hart read his paper on "The Evolution of Decay," at San Francisco. This paper has opened a path of possibilities, of which our philosophy had not dreamed before. Aside from the general scientific discussion of the bacterial influence on decay, the most important revelation was the use of formaldehyde instead of nitrate of silver, whose great objections in regard to discolorations confine and limit its use very materially. The most important point the essayist has made in the relative action of the different germicides, is that regarding the removal or reduction of water. There is no life without it. We know that bacteria will thrive without oxygen, but never without water.

An interesting question has arisen from the author's paper, viz., Are the bacteria he has found, in their discolored surrounding, chromogenic, or have they been stained by the material in which they live? We know that the *Spirochaete denticola*, which is always found near the gum mar-

gins, when they are covered with a dirty deposit—the very place where Dr. Hart has found the immune bacterial layer, is not chromogenic, and it is a question in my mind whether any of those bacteria are of a chromogenic nature. The *Iodococœa vaginatus* of Miller, which, if treated with iodide of potassium, gives a blue to violet color, is almost always found in dentinal decay; yet, it is not positively determined whether they are color-producing without their contact with iodine. Professor Miller, in his well known paper on "Green Stain," tells us that only in one instance did he believe that he found a bacterium on a deciduous tooth which was truly chromogenic, all others losing their color in their proliferating process.

It may, however, be true that they are themselves color-producing, and this may also explain the many discolorations we find in ladies' mouths, where tobacco cannot be looked upon as the chromogenic cause. Where a layer of decay has been rendered immune by the use of nitrate of silver or formaldehyde without previously removing all of the decay, the presence of the bacteria may have acted indirectly by offering a greater opportunity for the formation of an insoluble albuminous compound, thus forming quantitatively a greater barrier to the external ingress of new bacteria. It is decidedly to be hoped that Dr. Hart may find the specific bacterium which acts in itself as an immune layer. Until then I am inclined to think that any of the bacteria which cause a fermentation of the carbohydrates may become that immune layer simply by the change of environment. Such change is often produced in the mouth, circumscribed decay being an indication thereof, and it is very apt to stop the destructive fermentative process and will leave the bacteria in an innutritive surrounding, which thus may form the layer of which the author speaks.

**Immunizing
Carious Dentine
Left in Teeth.**

In a paper read before the Eighth District Society, at Batavia, during November last, I mentioned the fact that I had been in the habit of leaving decomposed dentine over the pulp, and so thoroughly sterilizing it as to make it immune to any further action of the bacteria present. I, however, confined myself to the layer of decomposed dentine in the bottom of the cavity only. My method is: *First*, a thorough dehydration with bibulous paper, chloroform and warm air; *second*, bicarbonate of soda to remove the acidity usually existing in decayed dentine; *third*, dehydrate again; *fourth*, use of an antiseptic, concentrated carbolic acid, trichlorcetic acid, ten per cent solution of formaldehyde. Keep layer of decomposed dentine thoroughly saturated, then fill temporarily with an oxysulphate filling. Repeat the antiseptic part of the treatment after twenty-four to forty-eight hours; then fill by putting a layer of medicated cement—my preference recently having been for thymol

—on top of decomposed layer; gutta-percha as an interposing material, then oxyphosphate, and complete with metallic filling.

Regarding the use of formaldehyde in connection with the hardening of dentine, as Dr. Hart terms it, we must accept his statement *sine disputatione*, as no one else has, to our knowledge, experimented with the drug in this direction. The author has opened a field to us which may prove one of the greatest blessings to both patient and operator. The use of formaldehyde may be followed by a drug less injurious to the soft tissues and fully as effective in its penetrating properties. The time is nearing when the dentist will be as much employed in the exercise of scientific prophylaxis as in the execution of operative and technical skill. It becomes at once the duty of every progressive dentist to work and make his observations in the directions given by the essayist; clinical experimentation alone can definitely decide the question to what positive degree the use of formaldehyde will prevent the recurrence of decay. If Dr. Hart has succeeded in making the surfaces of the teeth immune against decay with medicinal agents that do not share the objection of nitrate of silver, his work will rank the highest of any that has been given to the profession since Miller's famous work on "The Micro-organisms of the Mouth."

I am afraid that the violence which Dr. Hart has shown in his attack on Drs. Black and Williams will have the effect of prejudicing the reader against the author and will tend to throw a doubt on all the work that he has done. It is extremely unfortunate that whenever a question involving scientific work is brought up there is an immediate discussion, which is carried on with such ardor that bitter feeling is engendered and progress is seriously retarded by the animosities thus provoked. Work which is worthy of the name of science should be so thorough that when the methods are clearly shown, the results can be deduced by all who read. The temptation to make deductions and adjust the facts to suit preconceived conclusions must be resisted.

Dr. Hart says that in his method of treatment the "results have exceeded our expectations," "success has crowned our efforts." This is important. All that the profession is waiting for is to see these results, to be sure that Dr. Hart's observations are correct, to be sure that they can be generally applied in daily practice. When convinced on these points, the profession from the Atlantic to the Pacific, will join in grateful thanks to Dr. Hart for the results he has effected. It does not, however, furnish convincing proof of accuracy to array Drs. Miller and Andrews against Drs. Black and Williams, and I very much doubt if these gentlemen enjoy

being arrayed against each other in this way. I am sure Dr. Black, whose instrumentation has been criticised, will cheerfully give up the methods which he deems essential to thoroughness, when simpler and more effective methods can be devised.

Dr. Hart says that for the past three years he has been uniformly successful, and in making this statement he does not arouse a jealous or envious feeling in the mind of a single dentist. We are all delighted with his success and hope he will demonstrate his processes so clearly that we may all follow and achieve uniform success in preventing the development of caries. It does not, however, add to the clearness of his demonstrations to make the work of Drs. Black and Williams seem ridiculous. Controversy is not scientific demonstration. Dr. Hart has an idea that we all hope may be valuable in preventing caries of the teeth, yet we cannot but wish that he had waited until three years more had been added to the experience of the three years past, before he invited us to follow in his footsteps. It is possible that even three years' experience may seem insufficient to some members of the profession. It is conceivable that even though it is demonstrated that acid-forming bacteria attack the organic matrix of the enamel, or, on the other hand, leave the organic matrix untouched and act upon the enamel rods, that dentists will still be found who will prefer to go on trying to save the teeth in the old way.

If analogy counts for anything, Dr. Hart is probably right in presupposing a condition of susceptibility and immunity, and it is reasonable, if such conditions exist, to look about for methods of immunizing the teeth. If this can be done and the teeth rendered invulnerable to the attacks of those agencies which produce decay, every honorable practitioner wishes to know the process. It is to be regretted that Dr. Hart has, by his attacks upon the work of many honorable and earnest men, so far weakened his cause that in his own work he may be suspected of jumping at conclusions.

The scientific work which Dr. Hart attacks may need revision. It is probable that many inaccuracies occur, and that, in the light of future work, many deductions will be found to be erroneous. It is probable that these will be set aside and better work than we can do will be done by men who are now laying the foundation for such work in our medical and dental schools. It is, however, distinctly harmful to scientific progress and professional advancement, to have the large body of advanced thinkers opposing each other in bitter controversy, a mutual appreciation of each other's work, a recognition of the honesty of each other's motives, and a helpful attitude toward all who are trying to contribute to the profession's knowledge, would do more to destroy error and advance truth than all the controversies ever indulged in.

The methods of treatment suggested by Dr. Hart may seem cumber-

some to many, and it is possible that some of our patients may object, at least until we can assure them of the success of our methods. It seems possible that in a certain number of cases the rubber dam may not be able to cover every portion of the tooth, and that even if the portions treated by Dr. Hart's method be improved there may remain the most vulnerable portion which has not been reached by the antiseptics employed. Furthermore, it is doubtful if the perfect antiseptic tooth wash, or paste, or powder has yet been devised. It can be demonstrated that certain micro-organisms of the mouth produce an alkaline fermentation and this suggests the possibility of their usefulness in opposing the work of the acid-producing forms.

It would be better, it seems to me, to make such laboratory tests as would demonstrate the effectiveness of the remedies suggested and devote a few more years to simplifying the methods of application. If, then, the effectiveness of Dr. Hart's methods could be shown, it would indeed revolutionize our methods of practice and benefit humanity. I hope Dr. Hart will go on with his work until it can be proven beyond question that the decay of teeth can be prevented.

Personally, I would have been more gratified if
Dr. M. E. Rhein, the writer had presented the latter portion of his
New York. paper and omitted the beginning.

I have endeavored for two weeks to follow the deductions of Dr. Hart, wherein he strives very hard to disagree with the deductions of Dr. Williams. The main point on which he seems to want to antagonize Dr. Williams is that he claims that the organic matter of the tooth is not decalcified and cannot be decalcified by acid-forming bacteria, and that inasmuch as Dr. Williams claims to prove by his specimens that this portion of the tooth substance is the one that is primarily disorganized, we must deduce that Dr. Williams's theories are absolutely wrong, because organic matter cannot be dissolved by acids. Now, the fact is that I do not believe that in the enamel of adult teeth we can find any real organic matter. The organic matter does not remain such after we have what is known as an adult tooth. It hardens and becomes calcified more and more as the person and the tooth grow older, and consequently all these specimens which we have looked upon are not specimens where purely organic matter has been dissolved out, but organic matter which has been more or less highly calcified, and, to my mind, it seems most probable that that part of the tooth which is least calcified is the part which will become decalcified the most easily, and that is the reason why I believe Dr. Williams to be correct, that the organic portion of the tooth is that through which the bacteria penetrate the most readily because it is the least calcified.

It is inopportune to go any deeper into this point as I should like, to show how, later in life, the older the person is, the more highly calcified the entire bone of the tooth becomes. Of course, it is rather difficult to take up a collection of specimens, such as Dr. Hart has put upon the screen, and discuss them in the abstract. I personally am very much delighted with the enthusiasm which Dr. Hart has displayed in his efforts to circumvent the ravages of caries upon the human teeth, and I sympathize very strongly with him and agree to a very large extent with what he has said as to the benefit which we may derive from prophylactic measures. I differ from him also in many respects, and especially where he intimates that there is any possibility in the way that he outlines of preserving natural teeth that have been deeply attacked by caries by any means other than instrumentation. While I differ from him in this particular, I do not want to detract in any way from the great advantages that will accrue to the teeth of the human race, if the dental profession would do their duty in regard to the instruction of patients as to the prophylactic measures required to save their teeth. Personally, I object frequently, to the point of dismissing a patient from my service if he does not follow the directions he receives as to the care of the mouth. I do not purpose to expend my time in placing the individual's teeth in such a condition that I feel they can be kept immune from future attacks of caries if the prescriptions which I give to my patients are not utilized, and I prefer to dismiss such patients rather than to have good dental work ruined by lack of care on the part of the patient. The whole matter is summed up in the simple phrase—"absolute cleanliness."

In regard to the proof which Dr. Hart has brought as to being able to keep teeth immune from caries for months by any such method as here outlined, that is a question which only experimentation can demonstrate, either as to its correctness or otherwise. I would say, in order to illustrate my own feeling of how much Dr. Hart and Dr. Williams are in accord, that Dr. Williams places the greatest value upon the antiseptic treatment of tooth structures, both in caries of the dentine, and on the outside portion of the enamel. I have clearly in mind a method which he advocates of dehydrating dentine by means of absolute alcohol before filling, and after having dehydrated he advocates placing some essential oil, I think he recommends especially oil of cloves, in the cavity, on the ground that the dentine having been dehydrated, there would be a very considerable absorption of the oil of cloves. I have followed the principle of sterilizing all cavities as far as possible, for a number of years, and I believe it is a very valuable practice. I have been accustomed to using for this purpose formaldehyde, oil of cloves, and to some extent bichloride of mercury, and while I have heard objection raised to the use of bichloride

of mercury, as having a tendency to stain the teeth, I have used it for a great many years and have no recollection of any discoloration of tooth substance at any time, from its use in this manner.

The proper consideration of this paper would require it to be divided under two heads—the histological and the practical or prophylactic measures which he recommends. Under the histological head

Dr. John I. Hart,
New York. I must differ from the Doctor on one or two points, notably that at the point where an increased number of tubuli present themselves, the teeth, to my mind, are less immune to the penetration of the carious process than at other points where there are fewer dentinal fibers. The Doctor's argument that if this were the case we would have a passage of the carious process immediately around the tooth and a peeling off of the enamel, I think is contradicted by the fact that the tubuli run at right angles with the periphery of the tooth and that the micro-organisms will penetrate in the line of least resistance, and consequently along the line of the tubuli.

As far as the Doctor suggests less instrumentation than is recommended by some of our Western confreres, I cordially agree with him. I think if we can get a perfect margin half way up on the approximal surface of any tooth, we are not justified in cutting to the cervical border, and, if I understand the Doctor correctly, that is the line of argument he tried to bring out, and I thoroughly concur with his views.

I think the point made by the Doctor that we get different effects on teeth on opposite sides of the mouth, is often due to the fact that our patients sometimes use one side of the mouth more than the other, and consequently we get more self-cleansing on one side than the other.

I know the hour is late, but this is to be published, and I don't want it to be said that I was afraid to or did not hold up my end of this argument. I am here to prove certain things and those certain things are that the enamel of teeth contains some organic matter that is not completely calcified, and I think that has been shown conclusively by the pictures I have shown.

With regard to the point raised by Dr. Rhein, as to the decalcification of enamel, I agree with him perfectly when he says that the cement substance contains holes, but when he says that those holes are filled with air, I do not think he is right.

Dr. Rhein. I never said they were filled with air.

Dr. Hart. What do you understand those holes are filled with? If it is some portion which contains organic matter—

Dr. Rhein. I said it was partially calcified.

Then there is something there that is organic. If it is not completely calcified, there is organic matter; that matter is acted upon by the acid, and the acid itself is brought into contact with the inorganic substance and the inorganic substance dissolved out. When I showed the specimen on the screen it showed that, and the organic portion acted as mortar and hair; the mortar would not hang together without hair, and so you have the organic portions of the two substances holding the tooth together after the salts had dissolved out.

I am not here to find any fault with Dr. Williams, except in his claim of absolute knowledge. When he comes here and says that we must not speak against things he says are facts, I say he has failed to prove them to be facts. When any man says things are so and cannot be changed, he is himself a man, and man is changing every day.

With regard to the self-cleansing on one side more than the other, I agree with Dr. John Hart perfectly; where people use all sides of their mouths, those people's mouths are kept much cleaner than where people only use one side.

Second District Dental Society.

November Meeting.—Discussion of Paper by Dr. Lawshe.

I think that tonight we have reached the millennium in short papers. A short paper is a desideratum, but I do not think a paper should stop with something left to be said; or, if it does, I do not think we should sit down and leave it unsaid. Are we to admit that all that is lacking in artificial teeth is teeth that represent age? I think not; then why not make this meeting useful by discussing those needs? If any of us knows of any fault in artificial teeth that are furnished by the trade, why not say so tonight? Let us get it all in one discussion, and then endeavor to create a demand which will be met, because I must confess that I do not believe the fault is wholly with the manufacturers. I am fairly certain that some years ago, the S. S. White Company endeavored to do just the thing that is advocated here tonight—make teeth with abraded ends and discolorations, and sets that were different one side from the other. They were very much admired in the exhibition cases, and at convention meetings, and men said, "That is just what we have been looking for;" but nobody bought them. To illustrate the moral that if we create a demand for a thing we will get it, let me mention the Ash tooth, with a long pin. The Ash people got

into our market on the strength of that tooth, and very quickly we found the other manufacturers making teeth so like the Ash teeth that many cannot tell them apart. In fact, you can sometimes return them at Ash's depot for their own teeth! The English proved that there was a demand, and the Americans met it. If we keep on telling the manufacturers what we want, we will get it. Through my connection with the magazine which I represent, I am occasionally asked for an opinion on some appliance or something that is sent in, with the request that the house should manufacture it. Not very long ago I was asked to examine a "freak" tooth which had been submitted. When I saw it I said, "That is what every dentist had been looking for for years." The Consolidated placed it on the market, and I think it will sell. It is a bicuspid which has practically no cusp on the mesio-palatal angle. How many times have you been asked by the patient to grind off that cusp, because they feel it with the tongue? When you grind it you get a bad surface. The tooth is arranged so that it allows the tongue to pass over the first bicuspid to the second without any marked or noticeable change. I believe that any tooth that is demanded can be obtained. In constructing a full denture I select half a dozen sets of approximately the proper shade; then I make up my set of teeth out of those several shades, using a lateral of one shade on one side, and a different lateral on the other side. It is not a different color, merely a different shade of the same color. How many people have laterals of the same shade? Not many.

The fault I find is the lack of size and shape in
Dr. Halsey: the bicuspid and molars. In the average mouth, the bicuspid and molars that we get with the set are not large enough. We use the four teeth—two bicuspid and two molars—leaving off the third molar, and hardly ever is there surface enough on the molars. One of the great troubles is that there is not surface enough for grinding and maintaining their position when the lower teeth are brought against them. I nearly always select the incisors and bicuspid from the sets, and then fill in from the miscellaneous trays with larger bicuspid and molars. I use the Bonwill articulator, having learned the method from Dr. Bonwill. It is very useful indeed. I can take a full upper and lower impression, and then make plates of modeling composition, add wax, and take an articulation without touching any part. They will not tilt either. If you expect success, you must use teeth large enough, with a broad surface, and grind the cusps to articulate in such a way that when the lower jaw is thrown to one side and the lower cuspid is brought against the point of the upper cuspid, you will still have a point of articulation at the back. If you have studied the use of Dr. Bonwill's articulator, you will understand what I mean. By using

that method, I have success where others fail, and where I previously failed myself.

I would be very much pleased if we could get suitable teeth. I have had a great deal of difficulty, and I attribute it to the fact that the tooth makers make teeth to suit the men who buy the most—who buy them at five or ten dollars a bushel, and want small, white teeth. When I have made that statement at dental depots, they have admitted that I was about right. As long as that continues, the tooth makers will make teeth to suit the majority of their customers.

It is quite a common thing in our office to use two or three different sets of teeth to make one set, in order to get the variety of shades. Try it some time when you want to get different shades, and you will get just exactly the effect you want in color. You cannot get it with one shade, but you can by using two or three different shades, and sometimes using two or three different sets of teeth for the shape you want. It is often impossible to get from one set what you want either in color or shape. I think Dr. Walker is right when he speaks of the difficulty we would have to contend with in getting the class of teeth we would like. When the manufacturers can sell large numbers of teeth as they make them today, they will not make the very few that would be required to suit such a demand as the dentists present would make, at the same price per set. When you want such teeth as the S. S. White Company made about fifteen years ago, which were simply perfect—beautiful representations of Nature as to shape and color—and will pay ten dollars per set for them, you can get them. There was a great deal of hand work on them, and they were particularly adapted for middle-aged or elderly people. The class of men who would use that kind of teeth is comparatively small, compared to the whole number of dentists in the United States. One reason why the making of artificial teeth has not been held up to be such a high order of art as saving the natural teeth, is largely on account of the poor material we have had with which to work. Perhaps we have not had such poor material as we imagine, for we have not taken advantage of the material we had in trying to adapt it to the mouth. I wish some of you would try what has been suggested here tonight.

The cutting off of the first bicuspid tooth, having the thickness graduated from the cuspid to the second bicuspid, is quite old in the plate teeth. When we used to make full sets of teeth on gold, single teeth with gums, grinding each tooth into place, one of the greatest advantages was to have the first bicuspid tooth bevelled from the cuspid to the molar. That was considered a very great improvement.

There is one thing that I notice with the rubber teeth when I want to carve out the rubber about the necks of the teeth. Most of the rubber teeth are very flat. Where a patient has a short lip and shows the teeth a great deal, they look like a thick mass. If you can separate your teeth a little, using the continuous gum teeth, and grind off the roots, you will get a very pretty effect which you cannot get with the rubber teeth, because of their flat, straight appearance.

Dr. Ferris. I think we should insist on people using a larger sized tooth than is ordinarily used. I think you will all agree that fully two-thirds of the teeth which are used are entirely too small. I am not only speaking of the bicuspid and molars, but also of the front teeth. The front teeth of more than two-thirds are entirely too small. About a year or two ago, the S. S. White Company seemed to take an opinion of all the dentists as to what style of cusp they would like to have. They asked me for my opinion, and I told them I thought the tooth with the small cusp would be the most efficient. My experience has been that with the deep cusps you cannot get the teeth to articulate so well, although if you use the Bonwill articulator perhaps you can. I think the first step should be that we should insist on using larger teeth. Very often people come to me, and when I have taken the impression they say: "Now, Doctor, make me nice teeth—*not too large.*" They are always afraid they will be too large, and the largest tooth you can get in, is generally smaller than what they had originally. I ask them to leave it to my judgment and I will do the best I can for them. I find the long pin plate tooth gives me a great deal of service; I use it where there is difficult articulation. I find many people cannot wear a plate, simply because the cusps have been ground down, and they are not long enough, so I use the cuspids where a bicuspid should be used. I am very much pleased to hear what Dr. Ottolengui has said. I have long been looking for such a tooth as he mentions. I asked the people in the dental depot to make a tooth of that kind; that was as far as I went in the matter, but it was not far enough, and if someone would make a model or write out a suggestion to one of the companies, they would be doing a great service to us all. I have been using teeth for fifteen years or more, and I find that the material has depreciated very much. It seems to me they are getting worse and worse. Formerly you could grind off a cusp and still get a pretty good polish on it; now, if I have to do it, I am afraid to strike some hole. The tooth body should be made denser. I believe the great majority of us are not using Bonwill articulators, and we often have to do a little articulating after we get the plate done. It would be very good to get a tooth which you can grind down and not get into a hole.

Most of us have used sectional block teeth.

Dr. Turner. In certain cases that we meet, you can get three teeth ready-made in one block that are suitable; but where the lip is short and the gum is shown a good deal, pink rubber looks very badly, and we must have some kind of porcelain. In those cases, as a rule, if great care is taken and single gum teeth used, we can get a better result. I had a case last spring where the lady shows the gums very prominently. She has a short lip and a very movable lip, and the gum shows very distinctly when she is talking or laughing. I had to put in single gum teeth on a plate; it was a temporary plate. The result was better than by using the teeth three in a block.

In the last ten years I have gotten along without grinding a single set of block teeth. In a case where the lip is raised so that the pink rubber shows, on one or two occasions I have taken the single gum teeth and chopped them off just above the tooth edges, and then ground them in as if they were plain teeth, simply leaving the porcelain that is between the teeth, and then finishing up with pink rubber above that, so as to have the porcelain just where it shows most, and in the place where it is hard to get a polish on the rubber. I think it is better than having the single gum blocks with the joints showing between each tooth.

If I were a tooth manufacturer, I do not know what I should think, except that I was wanted to make a certain kind of tooth of which I should sell about one instead of the kind of which I now sell one thousand. We all agree upon the idea of having larger teeth and larger surfaces. I think one good natural lower molar that antagonizes well with an upper molar, to chew upon, is a great deal better than eight or ten artificial teeth. You can do a lot of masticating with one good natural molar opposite another. That is why I am so much opposed to bridge work.

There is a great deal of fault finding and growling at the depots when we want to separate sets. The only way I could do it usually is to get the six front teeth and then go elsewhere and select the bicusps and molars, and in that way make up what I want. Dr. Classing says the choice of teeth should be left to us. Now, it is the patient's mouth, and the patient has an idea of what he wants. If he has a great deal of confidence in you, he will let you go ahead; but patients usually do not want large teeth nor dark ones. I have a very good reputation for selecting the darkest teeth of any dentist who comes in to the depot; one of the S. S. White men is here and will bear me out in that. Their teeth are always too white. I think as a rule I have been very well treated by all the manufacturers. I do not believe in running them down very much. I

have not dealt much with the Consolidated Dental Manufacturing Company, but the gentleman who represents them tells me they make the best and strongest teeth in the world. I never tried them, but I am going to do so, so you see it pays them to send him around!

I have never been able to find a tooth that is shaded so it shows that bluish tint at the tip—that transparency of enamel. We do not look far enough for what we want. We should look around for the teeth that are not generally asked for.

I once found a set of the kind the last speaker mentioned, and if he should find one, he would never use another. In artificial teeth they are the worst things you could get. The lady wore it about twenty-four hours. The blue line will show very plainly across the mouth and will look very badly.

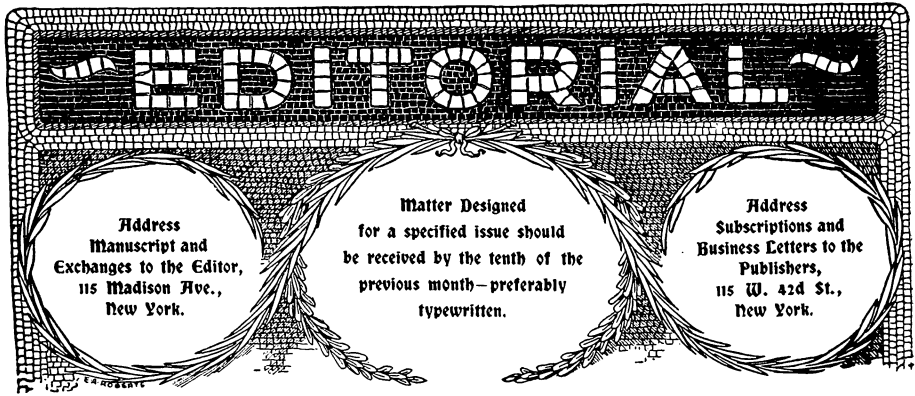
I had no idea of suggesting it for a full set, but to match a single tooth or two. Where you find a whole set of teeth with that blue transparent effect, and want to put in a single tooth, it is a heartache not to be able to find it.

It seems to me a curious fact that the English make of teeth seems so well to match the English people. There are two cases that I want to mention: One is of a lady who lacked a lateral incisor, some years ago. We searched all the dental depots in New York, without regard to name, and failed to find anything that would match her teeth that would look well in that position. We could not find it at the Ash place here, but the nearest we could get was from Ash, and she would not accept that. We suggested to her that when she went to London she should go to their London depot and ask them to get a tooth for her. She got an absolute match for that lateral there. She is an English woman. Curiously enough she went to London this Summer, and broke off a cuspid immediately next to the lateral. It had been quite profusely filled with gold by Dr. Dwinelle. Knowing the difficulty we had with the lateral, she went to Ash's place and wanted to get a cuspid, and they refused to sell her a tooth unless she came with an English dentist. They said they were not selling teeth to any but the profession. She got the first tooth, I believe, through the courtesy of Dr. Mitchell. I found no difficulty with the cuspid, however. I picked out six or seven teeth at Ash's New York depot and any one of them would have answered.

The other case was that of a gentleman—teeth for the lower jaw. We could not find anything to harmonize, and finally we went to Ash's and got a set of teeth, tried them in the mouth, and immediately found them to match. I mentioned to him that we had to import teeth from

England; that he looked more like an Englishman than an American, so we had to get English teeth. He answered: "The funny part of it is I was born in Liverpool."





The Gilded Age.



The millennium is at hand. Gold crowns may now be had at the small cost of five cents each. It may be of interest to consider the various stages by which this has been made possible.

It has long been the practice throughout the world to treat carious teeth by scraping out the decay and filling the cavity with some foreign substance. Many materials have been employed for this purpose, but none has stood the test of the diverse requirements so well as gold. Its fault is glaring, using the word advisedly, but its virtues have been proven so great that we have allowed ourselves to be blinded to that fault. Perhaps blinded is a strong term, for we often endure knowingly that which in the more important ways contributes to our well being. So with gold in human teeth, especially here in America.

However ancient may be the origin of filling teeth with gold, certain it is that in this country the art of so using gold as to produce the most durable result, has been brought to its present high plane of excellence. The American, and especially the American of today, is inherently practical. That which is useful and above all durable appeals to him more quickly than the beautiful but evanescent. The American has also learned that the most costly is often the cheapest, and he pays cheerfully the larger price for that which will last the longest.

These two facts, the skill of the American dentist in filling teeth with gold, coupled with the desire of the American patient to have the most durable material used, regardless of cost, has resulted in making the appearance of gold in teeth more common in this country than elsewhere throughout the world. We see it in the mouth of the millionaire and of the maid servant, and perhaps the latter may have the larger display.

Custom sanctions many reprehensible things, and that which we commonly see becomes tolerable. Thus the fact that the color and glitter of gold is not in harmony with the pearly teeth in which the precious metal may be set, has gradually come to be ignored.

So much perhaps was inevitable, for the day is not yet when gold as a filling material must give way for a better substitute. But now we arrive at the next stage of evolution. The gold filling in the false tooth. Mark the phrase! Such an unsightly trick is never resorted to by the maker of artistic, though artificial teeth. There might occur as a rare exception, the necessity for such a procedure. As a case in point an elderly man once had his six front teeth tipped down with gold, to save further abrasion and to restore the occlusion. Then a lateral incisor became badly abscessed and was extracted. To insert a white porcelain tooth in the midst of that array of gold would have made the falsity all too apparent. It was therefore necessary to supply a porcelain tooth having a gold tip. So also the insertion of one or two teeth in a mouth already showing much gold may render the filling in the artificial tooth excusable. But in a full set? Never! It is always a tacit admission on the part of the dentist that he is unable to supply teeth which will be above suspicion, for which reason he endeavors to allay suspicion. He sprinkles about two or three gold fillings "to make the teeth look natural." Think of that! Gold in false teeth to make them look natural! Why? Because in this country it has become "natural" to have and to see gold in teeth. Thus the artificer in teeth has come to imitate the handiwork of his operating *confrere*.

The next era dawned with the advent of the all
The Era gold crown. Made primarily for the restoration of
of Gold Crowns molars so broken down that a filling operation would
and the Evil Thereof tax patient and dentist excessively, it was soon utilized for the bicuspid region as well. Had the all gold crown never been used for other than the molars, much of the

evil that came in with them might have been spared us. From the molar to the second bicuspid was an easy stride, and if permissible for one bicuspid, why not for the other? So we came to have all gold teeth as far front as the cuspid. Here a temporary halt was made. First because even with the unscrupulous, some time is required for a radical departure, and secondly, the production of an all gold cuspid or incisor is not so simple or easy as with the posterior teeth. Again the people needed to be educated "up to" the gold crown.

The halt was not long, for the ready-made crown man came into the arena, and offered to furnish crowns to fit, for any case, meaning at first bicuspids and molars; but soon they were offering the gold cuspid, because needed (sic) as piers for bridgework. From the all gold cuspid to the all gold incisor was not a stride, but rather a glide. And so there began to appear gold teeth in the midst of otherwise perfect sets of natural organs. Could a greater abomination have been foisted upon the people? If some of our actors and actresses, who have submitted to this barbarous method of restoration (?) could only "see themselves as others see" them, they would sit up over night to be up betimes in the morning to find some dentist with conscience and skill enough to relieve them of the monstrous adornment.

As with the gold filling, so with the crown. The filling was placed in false teeth to make them more "natural," and now that so many wear a crown of gold, we find dealers offering to supply "gold incisors and cuspidals for insertion on plates among false teeth." This of course is another resort of the unskilful to hide his blundering methods. Another trick, and like all tricks, unworthy.

And so the gilded age has come upon us. We are displaying gold in our teeth, and we are wearing whole teeth of gold. The vain and the foolish maiden must have a crown of gold because a rival has one. Perhaps she may even think to outrival her rival, by having two gold teeth. At any rate, it is a common sight. A too common sight, and being so commonly seen, what wonder that the mere man of commerce should seek to squeeze a few pennies from the vanity of the people?

There sometimes appear in the French newspapers, advertisements which offer "false sets of teeth, to let, for balls and parties." This reads oddly, but in France where the *bal masque* is still popular, false teeth

help to disguise as does false hair ; and the teeth are little more than a sort of mask for the mouth.

But in the streets of New York peddlers are selling "gold crowns" for five cents apiece. One of these is figured at the beginning of this article. It is a little device of brass, slightly washed with gold, the front being a fair representation of a cuspid, while the back strip aids in keeping the fixture in position. It is slipped over the nautral tooth and being of soft material is easily molded so as to fit snugly and remain in place.

Thus the maiden with a rival need no longer have her good teeth cut off for the placing of the crown of gold. For ten cents she can doubly outshine her rival, and have her own teeth in the bargain. Thus cheaply, and for a while, she may be "in the fashion."

What a satire on professional effort! What a disgrace that such should be the fashion. The one hope is that fashions change ; may this one not long linger with us.





**Department of
Office and
Laboratory.**

In our last issue we published a letter from Dr. R. J. Hood, arguing in favor of our department of "Office and Laboratory," and suggesting that we "feel the pulse" of our readers before permanently discontinuing the series of articles. Well, we have felt the pulse, and it is so rapid that it is difficult to count the beats. Every morning now there is a large batch of mail matter, and one after another the seals are broken and the envelopes explored and shaken in the hope that "at last that patient has sent a check." But not so! The missives are all in one vein. "I vote for Office and Laboratory;" "By all means give us more articles on Office and Laboratory;" "I hope that Office and Laboratory will be continued;" "I second the motion of Dr. Hood;" "I had intended writing to you myself, but Dr. Hood expresses my views better than I could;" etc., etc. This class of communication has arrived in hundreds. In some, the writers do more, giving reasons for their approval of the department, and a few of these letters are published in this issue.

There is one letter that we have "longed for," but "it has not come." The writer lives in Boston, where all highly ethical people live; people you know who in culture and refinement would score one hundred per cent with a plus, in a competition. This cultured Bostonese ethical dentist

has favored us with one or two letters criticizing adversely our magazine, a particularly fierce diatribe being aimed at Office and Laboratory. These letters have not been answered before, because in each instance the gentleman neglected to sign his name. It seemed probable that if the unsigned letters were sent voluntarily, an open invitation for an opinion might have tempted the gentleman to favor us with a signed document. But evidently it is not to be. So it seems that the vote is unanimous. No one, *except anonymous writers*, has a word to say against the department.

One anonymous writer, who furnishes monthly pabulum for the readers of a Western magazine which makes a specialty of anonymous gossiping, declared that the department of Office and Laboratory in ITEMS OF INTEREST was an "advertising scheme." Advertisements usually bring in cash to the publishers, whereas this department has been a great expense, for engravers have a persistent though reprehensible habit of sending in bills for illustrations, and no dentist has paid us so much as a gold plated penny for "puffing" him. We therefore turned up our nose at the charge with becoming dignity and treated the accusation with contempt.

Later, however, it became apparent in one or two articles which we declined, and in one or two others which were duly pruned of objectionable matter, that some dentists would be quite willing to accept the suggestion of the anonymous gossip writer, and get a little personal boom out of us if possible. For this reason the articles were abandoned.

The department was not inaugurated with the idea of giving advertisement or personal gratification to any dentist, but for the gratification and enlightenment of our readers. It was intended to be a medium for an interchange of ideas on office and laboratory arrangement. It was desired that men should describe the appliances which had proven useful to them, especially appliances devised by themselves, and not procurable at dental depots. A visit to the office of almost any *confrere*, and especially of one who has a well established practice systematically managed, will always show the visitor some "new tricks." Only a few of us can make these visits, and by the limited number who can, only a few visits are made. By photography, and half-tone reproductions of the same, a fairly good view of another man's place may be obtained. This magazine was, and is willing, to furnish the illustrations and space for the articles. But we cannot send agents around the country writing up men's offices. This much at least the dentists must do. Several hundred men have written saying that they approve of the department. Let these look about them, and if they have anything worth communicating, let us have a picture and a description. It is not necessary to photograph the whole suite of rooms, though it may be done if a good reason exists. An illustration of the device, apparatus or machine, with proper text descriptive of its use and usefulness will be acceptable and helpful to others.

There is an establishment recently fitted up in Brooklyn which is well worthy of a description. If the consent of the dentist can be obtained this place will be described and illustrated in the style desired in the department of Office and Laboratory.

Dr. R. O. Sadler, of Baltimore, makes the following query: "Will you kindly advise as to the best mode of treatment in the case of a lateral incisor that has abscessed in the roof of the mouth, though no fistula has formed? There is a hard lump that often gets very sore. I have bored through the apical foramen, and used peroxide of hydrogen through the root, but I fear not enough reaches the abscess, though it froths freely as it runs back."

Here is the class of case which illustrates the doubtful value of a "question box." A description of an actual case in practice is given, and advice asked, which presumably would be followed; the patient thus being treated in accordance with the directions of one who has not seen the mouth. Is this fair to the patient? Is any one so wise as to diagnosticate and cure a lesion which he has not examined?

The condition outlined by Dr. Sadler may be considered in a general way, but whatever is said here must not be construed into being specific advice applicable to his patient. First, it may almost be claimed, that despite the fact that it is a straight rooted tooth, accessible because of its anterior position in the arch, the lateral incisor often presents the most stubborn resistance to treatment, when abscess has supervened. A possible explanation of this fact may be that the apex of this tooth is turned more or less abruptly in a large proportion of instances. An examination of a thousand lateral incisors extracted would demonstrate that it is more difficult to find one having a perfectly straight canal, than one wherein the canal is bent near the apex. This curvature at the apex may lead an operator to imagine that he has found and enlarged the apical foramen, whereas perhaps he has but drilled through, in which case not only has he made a false opening, but the septic material in the curved true canal remains as a source of repeated infection. For this reason it is usually sound practice to resort to surgical interference, where purely medicinal measures have failed. The procedure is to cut down to and amputate the end of the root. If carious bone is present, as it probably would be in a case extending to the vault of the mouth, it should be removed with thoroughly sterilized bone burs, which is not generally a serious or a painful operation. Where pain is met, however, full anæsthesia is indicated, rather than futile efforts with the doubtful aid of cocaine. In general, it may be set down as a safe doctrine that wherever there is a pus tract in bone, surgery offers a safe and radical means of cure, if attempted with confidence and carried

to the full limits required. The actual operation of course should be followed by constant attention to proper drainage and aseptic precautions. Indeed, surgery and asepsis are cousins, if not more nearly related.

**Cataphoric
Instruments
Wanted.**

Dr. W. A. Price, 2238 Euclid avenue, Cleveland, Ohio, writes to us as follows: "For many months I have been carrying on elaborate and very thorough tests of the various cataphoric controllers on the market, intending to publish my results for the benefit of the profession. The great majority of the manufacturers have cheerfully co-operated by submitting their instruments. Fearing that there may be some good ones which I may have missed, I desire any persons, manufacturers or otherwise, who have superior instruments for controlling the electric current, with whom I have not communicated, to kindly let me know and I will be pleased to correspond. The work is thoroughly scientific and exclusively for the advancement of science. There are a few much advertised controllers which have not been submitted to me, though I take all responsibility. The co-operation of the profession will be of great assistance."

**Kingman
Taxes
Dentists.**

A correspondent notifies us that in Kingman, Kan., the councilmen have adopted an ordinance which allows the authorities to collect ten dollars yearly as an "occupation tax." He thinks that but one other city in the United States—a city in California—levies such a tax, and he would like to hear of any other town having such a law.

**Dentists
Not the Worst
Business Men.**

Medical Snap Shots says in its February issue: "A physician speaking of the business side of the practice of medicine says: 'A doctor will trust people longer and more foolishly than any other man on earth. He will go on trusting people for years, until they learn to hate him because they owe him so much, and then they leave him and go to another physician, and pay *him* with little or no hesitancy.' We had always supposed that dentists enjoyed the distinction of being the worst of business men. Here is another honor wrested from us by the medical men. Well, so be it! We may still claim to be the worst business men, next to physicians."



Orthoform.

Reported by GEORGE RANDORF, Berlin, Germany.

Dr. A. Einhorn and Dr. R. Heinz (Munich) have discovered a new local anæsthetic, orthoform, a methylated ether composed of amidoxybenzoic acid. This substance has an advantage over the cocaine, being non-toxic, and causes an anæsthesia of very long duration on account of its slow absorption. Orthoform besides has the property of decreasing the secretions, and exercises an antiseptic effect.

Orthoform is a white crystalline powder, without smell, insipid, slow to dissolve in water which only dissolves the quantity absolutely needed to have a sufficiently analgesic effect. On the other hand, its absorption is so slow that the analgesic effect once obtained, will last for hours, even for several days. If applied as a powder or as an ungent to the mucous membrane, orthoform after a few minutes causes a slowly progressive anæsthesia. This is easily proven by putting this medicament very evenly on the tongue, or on the conjunctiva of the eye. The same analgesic effect is produced on sores and painful ulcers, but it does not act through the skin or a thick and hardened mucous membrane.

Orthoform proves inactive where there is no continuity of integument, as, for example, in burns of a deep degree, in sores joined by suture, etc. On the other hand, the analgesic action of orthoform is very distinct in burns of a less degree, in all painful sores, cancer, varicose ulcers of the leg, fissures of the lips, the breast, the anus, ulcers of the tongue, the larynx, etc. If applied inwardly, orthoform is a good remedy for calming the pains of cancer of the stomach, but it does not counteract the painful sensations caused by a chronic catarrh of the stomach or a dilation of this organ, the gastric mucous membrane being intact in the case.

**Chlorhydrate
of Orthoform.**

Orthoform combined with chlorhydric acid forms a soluble salt. However, this chlorhydrate of orthoform is not suited for treatment of the conjunctiva or the nasal mucous membrane, buccal and pharyngo-laryngeal tissues, nor can it be used for injections under the skin, for it strongly irritates the tissues through the reaction of its solution. Still it may be utilized for inward application (ulcer and cancer of the stomach), also for inner urethral injection in a case of blennorrhagia. A patient suffering from chronic blennorrhagia has supported an injection of a solution of ten per cent of chlorhydrate of orthoform without reaction, and the anæsthesia of the urethra obtained in this way has lasted for twelve hours. In a case of fresh gonorrhea, these same injections have caused each time a violent reaction; after four days, however, the flowing had completely ceased.

As orthoform is free from any toxic action, a fact proven by experiments on animals, it can be largely applied to sores and inflamed mucous membranes. Thus in a case of cancer in the face, about fifty grains of orthoform have been put on locally in the course of a week, not only without the slightest inconvenience, but on the contrary to the great relief of the patient.

Xeroforme.

Reported by GEORGE RANDORF, Berlin, Germany.

Yet another antiseptic which may be substituted for iodoform. Mr. Leveque in his odontologic review says: Xeroforme presents itself as a fine powder of a yellow color. It is insoluble, insipid, and gives out a very faint odor of phenol. It is neutral and solid and only dissolves above one hundred and twenty degrees.

It is an antiseptic antizymotic as well as a dessicant, but its action on sores is not felt until after it is divided. In the bandaging of burns it acts also as an analgesic, as powerful at least as iodoform, and it would even be superior because it does not cause either irritation or inflammation near the sores.

Xeroforme can be employed very easily, either as a powder or in a state of xeroformed gas, as an ointment or paste of ten and twenty per cent. Lastly, this substance occupying a volume twice as great as iodoform of the same weight, and the price of the two being equal, it would be more economical to use the xeroforme.

Temporary and Sixth Year Teeth.

Evil Consequences from Lack of Care.

By PROF. DUGOURNAU, Paris, France. From *L'Odontologie*.

The evolution of the temporary teeth is completed within the twenty-eighth and thirtieth month, and from this time, or rather from their third year, children should come under dental care.

It may seem at first that at the age of three years, the child be too delicate to undergo the operations of the dentist's chair, so dreaded even by adults. But this ought not to be an obstacle. Children do not reason, and if the dentist knows how to proceed with them, they allow themselves to be operated upon more easily than their papas and mammas, at least if they have not been frightened beforehand. In fact parents do wrong to speak of operations they have undergone, in the presence of their children, and these who do not allow anything to escape them, when the occasion demands their being taken to the dentist, go there with prejudices that prevent intervention.

Nervous sensibility in a child is much less accentuated than in an adult person; during my long practice I have made observations to that effect. I have often found that the deep caries of temporary teeth with exposure of the pulps do not cause on being touched that violent pain of permanent teeth. It is for this reason we can, without too much difficulty, attain the end we propose—to save the temporary teeth, as we try to save the permanent ones, from destruction by caries to which they are so greatly exposed.

The dental arches deprived too early of their teeth shrink, and when the permanent teeth make their appearance, they lack space and cannot occupy their normal positions.

This lack of development of the dental arches causes anomalies difficult to overcome without recourse to prosthetic apparatus, and it not infrequently fails to suppress some teeth, the jaws being too narrow to lodge them all.

Yet, the greatest difficulty the practitioner experiences is not in regulating these imperfections, but in maintaining the teeth in the position in which he has placed them. The wearing of retainers is indispensable for several months, even years, in order to allow ossification to take place and fill up the gaps caused by the movement, for, from the moment the

child ceases to wear the apparatus, if ossification is not complete, the teeth which have been moved, have a tendency to again assume their definite position and everything will need to be done over again.

Apart from these failures, if we consider the number of teeth susceptible to caries from contact with the prosthetic apparatus more or less aseptic, we are forced to admit how useful and profitable it is from all respects, to give attentive care from the mouths of children from their tender age.

**Treatment of
Caries
Temporary Teeth.**

Allow me, therefore, to give you a concise review of the means I habitually employ in the treatment of carious temporary teeth.

This treatment does not differ much from that of the permanent teeth, and with your leave I will divide it into four classes, in the same manner as carious permanent teeth are indicated, according to the progress they have made.

First, superficial caries, the enamel and dentine having been scarcely affected.

Second, deeper seated caries where the pulp is yet sound.

Third, deep seated caries with pulp exposed and living.

Fourth, caries with dead pulp and abscessed fistulous teeth.

The treatment of the first and second class is very simple. It is sufficient to thoroughly cleanse and dispose of the caries, and proceed immediately to fill them with amalgam or cement.

I prefer cement for the anterior teeth, and amalgam for the posterior.

The reason I prefer amalgams for the molars, is their easy manipulation. It is, in fact, easier to obtain with them durable fillings in spite of the infiltration of saliva, which is not the case with cements that do not admit moisture. Nevertheless, I quite freely employ the latter for grinding surfaces, but never for interproximal caries, as their solidity is too uncertain.

**Arsenic in
Temporary Teeth.**

In the treatment of caries of the third class, I begin with an arsenical dressing and employ with preference, cotton prepared by Thomas (in very little doses). This preparation does not absorb so readily as pure arsenic, and is less dangerous. I allow the dressing to remain for twenty-four hours at the most, in order to avoid accidents. I then remove the dressing and open the pulp chamber broadly. If the cleaning causes no pain, I replace this first dressing by another of carbolic acid, which I allow to remain for two or three days. But if the tooth is sensitive, I renew the arsenical dressing, which I always remove after twenty-four hours to replace it by one of carbolic acid.

After this three or four days' treatment, I extirpate the pulp and apply an iodoform dressing, covered by a provisional gutta percha stopping, which I leave for two or three weeks in order to make sure of the complete insensibility of the tooth, and to avoid, in case periostitis sets in, making the child suffer by the extraction of the tooth. For although some practitioners may pretend that all teeth may be filled immediately after extirpating the pulp, I for my part, have experienced evil consequences, and for this reason I use the precautions above mentioned, which have always proved most satisfactory.

I will even add, that I attach more importance to this, as it is indispensable with children to avoid making them suffer, for fear lest they be deterred and hinder us from taking the necessary steps to save their little teeth.

I employ the same means for the final filling of the teeth of the third class as for those of the first and second, but taking care to, in the first place, line the pulp chamber with a thin layer of gutta percha without making it penetrate into the canal.

As to the fourth class, I clean them superficially at the first session and apply a dressing of oil of cloves or iodoform, which I leave for forty-eight hours; only after this first dressing do I proceed with a thorough cleaning of the caries. If there is an abscess I cauterize it galvanically, and try to pass through the canals into the abscess antiseptic injections. I renew my dressings every two or three days, and, after the abscess or fistula has disappeared, make a provisional stopping with gutta percha, which I allow to remain for two or three months before I proceed with the final filling. After that the same treatment as for class three.

**Sixth-Year
Teeth.**

If we acknowledge the usefulness of the minutest care to be given the temporary teeth, how much greater must be the care of the sixth year teeth?

These teeth, while properly belonging to the second dentition, are nevertheless an integral part of the first, since they evolve in advance of the shedding of the temporary ones, and are destined generally to a very precarious existence. Aside from their predisposition to caries, they are, unfortunately, confounded with their neighbors, and are like these, completely neglected.

But their rapid destruction is mostly due to the ignorance of the parents. If they knew which ought to remain, and which are, so to speak, the principal pillars of the second dentition, they would understand the importance of saving them, they certainly would not allow them to go without care. They would entrust their children to our continuous care and we could fight the evil before it had made too large inroads, whereas now, they bring their children to us when it is too late.

Who amongst us has not often had striking examples of what I am saying? How often has it not happened to us that children seven, eight or ten years old, have been brought to have that tooth extracted—and the parents are always surprised to learn that it will not be replaced. Let it be well understood, if caries is advanced very much, if the crown of the tooth is three-quarters destroyed, the dentine softened up to the end of the pulp chamber, the child suffers horribly and wants to be relieved. Extracting the tooth is a radical measure, giving instant relief; but what will be the result? It is probable that if the sixth year teeth are in this condition, the temporary ones are affected in the same manner. Similarly, if we extract the sixth year teeth, what remains to the child to masticate his food with?

It is therefore our duty to try to cure and preserve them, at least until the premolars have been replaced by the bicuspid of the second dentition. From now on, if the sixth year teeth have at first been repaired or judged incapable of rendering long service, it will be best to get rid of them, and for a very good reason. By extracting them at the time the twelfth year tooth is about to evolve, this latter takes their place, and no gap will remain in the jaw, whereas by extracting the sixth year tooth after the evolution of the twelfth year tooth being complete, the gap thus produced will never be filled. The twelfth year tooth having a tendency to approach to the bicuspid will incline forward, and its grinding surface become injured from contact with the corresponding tooth of the jaw opposite, thus preventing it from properly performing the function for which it was designed.

We must, therefore, proceed with prudence and discernment, according to the case, so that the child which has been entrusted to our care may profit from our art.

**Treatment of
Sixth Year
Teeth.**

With regard to the treatment of these teeth, I will confine myself to the caries of the third and fourth class—those of class one and two can be filled immediately without inconvenience—I will say only that I fill these latter preferably with gold, using a crystal gold on account of its easy manipulation.

In the case of caries of the third class, I remove carefully the softened dentine, which enables me to apply an arsenical dressing under favorable conditions for prompt action.

If the caries is upon the grinding surface of the tooth, I generally leave this first dressing for forty-eight hours; if on the contrary, the caries is interdental and near the neck, I always instruct my patient to come back within twenty-four hours.

The next day I thoroughly clean the cavity, place another arsenical dressing into the pulp chamber to completely destroy the pulp, and do not remove this last dressing for several days. I enlarge, if necessary, the root canals with a Donaldson broach to be able to easily introduce a carbolized (acid) pad, which I leave for several days. I then replace the pad by gutta percha dipped first into oil of eucalyptus; introduce this gutta percha very carefully to avoid its passing beyond the apex of the roots, for at the age of eight to ten years, the apex is still open, and if by some misfortune, the stopping, whatever it be, pass beyond, complications are to be apprehended. Neither do I finish the filling until after forty-eight hours of observation. This short space of time is sufficient to insure success, for if periostitis should set in, it is always immediately after filling the roots.

My treatment of caries of fourth class, with abscess or fistula, or simply infected, consists in applying antiseptic treatment until the teeth become aseptic. I prepare the cavities and root canals in the same manner as above, waiting, before filling the canals, until every trace of inflammation has disappeared. Sometimes, when I fear a relapse, I even put a permanent antiseptic pad in the canals, fill the cavity with gutta percha and allow this provisional stopping to remain for several months, before proceeding with the final filling.

It goes without saying that for all these fillings I always use the rubber dam. I even take the precaution not to remove the provisional stopping without first applying the rubber dam, in order to avoid saliva getting into the cavity, contributing thus to a failure.

If I cannot apply the dam, I prepare in advance the gutta percha that is to replace the pad, and guard against moisture by means of lint and spunk, after which I dexterously remove the temporary stopping to gain time to fill at least the root canals while they are dry.

Diseases of First Dentition and Treatment.

(From *Presse Medicale*.)

The period of eruption of the first teeth has always been considered a very critical one for children, and although during the last few years certain authors have doubted the existence of diseases of dentition, the majority of clinicians have not become less convinced that these affections really do exist.

Eruption of Deciduous Teeth.

The eruption, the last stadium of the evolution of the dental follicles does not always proceed in the regular way. It is seldom one sees children born with teeth, while others have their gums still bare and intact at fifteen or twenty months. But these are exceptions, and the normal eruption takes place in about the following order: The two central inferior incisors make their appearance at the age of six or seven months, within about ten days. After a rest of two months, the two central superior incisors appear. Five months later at the age of fifteen months, the two lateral inferior incisors, and after these the two lateral superior incisors evolve. At this period there is another delay. The four first molars make their appearance from the eighteenth to the twenty-fourth month, leaving a gap between them and the lateral incisors, which space, from the twentieth to the thirty-fourth month the canines fill. Finally, the second molars complete the first dentition, which ought to be terminated at the end of the third year.

Two facts are to be noted in this chronology of the eruption of the deciduous teeth: The homologous teeth evolve at the same time, and their appearance is followed by a period of repose; the eruption of the teeth of the lower jaw precedes that of those of the upper jaw.

How does this eruption take place?

Manner of Eruption. The follicle has given birth to the tooth, the different parts of which are developed and calcified progressively in the jaw. To erupt it must penetrate the hard and soft tissues, and thus we must assist successively the absorption of the anterior alveolar wall, the use and perforation of the gum, and finally the reconstruction of the alveolus.

These several periods of eruption of the teeth are well known, but there is no mechanism, no force presiding over this work. Some (Magitot) maintain, that the tooth is pushed outward as a result of the development of its root, to be supported upon the bony tissue of the jaw; others (Dumont-Porcelet) believe that the alveolus in its development, draws out with it the teeth imbedded therein, or rather that it forces out the tooth as a cherry pit pressed between the fingers.

We believe that the tooth, following the natural way indicated to it by its mode of origin—epidermic production—tends to gain the free surface of the gum. The constant nutritive influx brought to it by a special circulation causes its progressive development, and, while its volume constantly increases, it produces upon the surrounding tissues an effect similar to that of "*osteite rarefante*." Thus also may we see slowly disappear before the dental mass, the bony wall which hindered its eruption,

and that at a more rapid pace this tooth penetrates the layer of gum and makes its eruption.

But this vital activity which has produced "*osteite rarefiante*" is not subdued all at once, and, in the common order in which we observe in other points of the organism, we will see it become the starting point of a "*osteite condensante*." The alveolus changes, is enlarged, thus assisting the pushing of the teeth.

This theory permits us to explain the accidents that may happen during the course of the first dentition, which we will briefly pass before us in review.

**Diseases of
First Dentition.**

The child which is cutting its teeth suffers now and then, is fretful, agitated, makes faces, cries and brings its fingers to its mouth. It is chewing and biting, trying to calm the tormenting itching; the saliva secreted in abundance flows from the mouth and wets the bib.

The mucous membrane of the gum is more or less inflamed, and all the local complications from stomatitis to thrush are liable to set in. At this time also, may be observed sometimes, a swelling of the adjacent ganglion, which is very slow to disappear and may lead to errors in diagnosis.

All this time the child has fever, and passes the nights without sleep. The buccal inflammation reaches the nasal pharynx and extends to the respiratory organs; now and then also, pharyngitis and laryngitis may become catarrhal and hypersecretion of the saliva may increase according to the degree of obstruction of the nasal passages. In this case also a dry whooping cough may set in, which is liable to become serious if bronchitis or broncho-pneumonia supervene.

Complications are frequent in the digestive tube; especially gastro-intestinal catarrh with vomitings and diarrhœa. In this case the stools yellow at first, rapidly turn green and bloody, according as it may be lientery, inflammation of the intestines or dysentery. The child does not assimilate its food, loses in weight, or at least ceases to increase.

The whole nervous system is affected in a reflex manner by the dental evolution, and there is no mother who is not greatly apprehensive of convulsions at this time. These are perhaps, mere grimaces, convulsive movements of the face, or upper and lower extremities, but they may easily become more serious, with strabismus and nystagmus, internal convulsions, coma, and may possibly leave an indelible trace of their passage. In the opinion of certain authors, this is often the sole cause of St. Vitus' dance.

Numerous morbid diseases of the skin have been traced to dentition—vaso-motor troubles with excessive pallor or redness of the teguments,

profuse sweats with sudamina, nettle rash, prurigo, impetigo, several forms of eczema.

The sense organs are equally susceptible to be affected in reflex manner. Otitis is not infrequent during the course of dental evolution, and frequently a form of conjunctivitis, non-contagious and perfectly curable may be observed.

In conclusion we will say that the kidneys may become deranged in their functions, for during the period of dentition urine has been observed not to remain limpid and uncolored, but to turn cloudy and white, probably on account of the excessive proportion of phosphate it contains.

How and when do the troubles attributable to the first dentition manifest themselves? Are all children menaced by them, and that during the whole course of dentition?

It has been observed that the morbid phenomena coincide particularly with the eruption of the molars and canines and that they are much more accentuated when a greater number of teeth appear at the same time.

Panard, of Avignon, basing his opinion upon hundreds of observations, asserts that during the cold season, dentition is accompanied by reflex phenomena in the respiratory passages, whereas during the hot season, accidents befall with preference the digestive tube. The same will hold good according as one lives in the north or south of France.

A certain importance has been attached to the period and mode of eruption. If the evolution proceeds normally, there will be no accident; if, on the contrary, the evolution be too soon, or retarded, troubles of all kinds will be encountered. The same might be said according as the teeth place themselves with more or less regularity upon the dental arches.

Certainly all children are not alike before dentition, and this phase of development, which certain authors do not want to consider other than a physiological act incapable of producing morbid phenomena, is certainly a period of disturbances in the organic function; not every infant during the period of dentition is fatally sick, but all are in a state of inferiority, predisposed to disease.

If the heritage has furnished the child with a lessened vital resistance, the troubles multiply in the weakest points of its organism.

This may be seen in the hereditary-syphilitics, the rachitics, the idiots, whose follicular evolution has been tainted by the hereditary stain, presenting an abnormal eruption accompanied by all sorts of accidents. Here is the reason why children with a nervous blemish are predisposed to convulsion, without it being necessary, in order to explain them, to accuse premature hysteria. Finally this explains the frequency of accidents of dentition in children whose constitutional condition is weakened either in consequence of a bad hygiene or infectious diseases.

**Treatment of
Diseases
of Dentition.**

The diseases of dentition are treated in different ways; certain remedies can, it is true, alleviate them, but often their grave consequences are not removed without prompt interference.

There is no doubt that each morbid localization requires its special therapeutics. But in order not to transgress into the domain of general medicine, we will speak here only of the treatment of local diseases caused by the dental eruption.

The hygiene of the mouth, which ought to be observed from the most tender age, is obtained under the present circumstances by frequent and abundant lotions with a one per cent solution of hydrate of chloral. This preparation has the advantage of being an analgesic and antiseptic; it is, moreover very slightly toxic.

The itching may be calmed by means of a cocaine preparation of the following formula: Hydrochlorate of cocaine, fifteen centigr.; chloroform, one gr.; glycerine, twenty grs.; essence of roses, six drops.

Hypersecretion of saliva coincident, frequently, with catarrh, is sometimes alleviated by extensive lotions of the nose with a lukewarm solution of boric acid, or hydrate of chloral.

The troubles caused by dentition not yielding to the therapeutic applications, always find a remedy, heroic, so to speak, in the cutting of the gum.

This may be done in the following manner: The child is held firmly upon the knees of its mother, and held immovable by a third person. The index finger of the left hand is introduced between the dental arches, pushing the tongue out of the way. The white or congested gum, the cause of the trouble, under which the tooth is evolving, is thus laid bare, and with a bistory held nearly flat the gum is cut once or twice, making the incisions either parallel or crosswise.

It is not necessary to say that this little operation must be performed with the utmost cleanliness possible, after the child's mouth has been washed with soap, and the operator's fingers and instruments having been made aseptic.

During the two days following the operation, it will be well, besides the ordinary hygienic precautions, to lightly clean the wound several times a day with a small sterilized cotton pad dipped into a weak solution of carbolic acid.

These cuts must not be performed until the tooth is on the point of breaking through the gum. They have no "*raison d'être*" and will give results in this case only. If made sooner they bring serious consequences. In fact, if, in order to find the crown of the tooth it would be necessary to cut through a thick layer of soft tissues, the wound would not remain

open, and we would see rapidly forming a scar-like fibrous tissue, which would later form a serious obstacle to the evolution of the tooth.

These are the means to be employed locally for the treating of troubles of dentition. But we must not lose sight of the fact that these troubles may also come in consequence of the general and constitutional condition of the child.

Care, therefore, has to be taken in strengthening the system with phosphate, iron, cascarilla, and constantly guarding it by a severe hygiene.

A Study of Eucaine "B" in Stomatology.

By DR. A. LEGRAND. "Société de Thérapeutique," Paris, Session of June 22, 1898.

(*Revue de Thérapeutique*, Paris, July 1, 1898).

The results recently obtained with Eucaine "B" in general surgery by Dr. Reclus, and communicated to the Academy of Medicine at its session of March 29th, of this year, have led me to make important modifications in the use of that drug in stomatological work.

Instead of the 1 per cent I employ a 2 per cent solution; *this is absolutely free from danger, and permits operation to be undertaken very quickly. Analgesia sets in immediately*, and there is no necessity of waiting for five minutes, as is the case with the weaker solution. This is no slight advantage for the patient.

Further, we can operate in the upright position without the least fear of trouble, and we can allow our patient to walk out immediately after the work is done, which is not possible with cocaine.

The following points seem to me to be important enough to attract the attention of stomatologists:

Without going into the technique that is to be followed in order to obtain proper analgesia, I will only say that the injection of 1 cubic centimeter (17 minims, *i. e.*, 2 centigrams or $\frac{1}{3}$ grain of Eucaine "B" is sufficient in the majority of cases to permit the extraction of a large sized molar without the patient suffering any pain. If this dose should appear insufficient, *there need be no hesitation in injecting a larger quantity of the anaesthetic solution*. Immediately that the injection is made the forceps can be taken and the diseased tooth removed. Dr. Dumont and I have operated over sixty times by this method, and our patients have never experienced any pain.

To study any post-operative troubles that might appear, our patients were made to walk up and down in the yard of the hospital (la Pitié) immediately after the operation for from five to eight minutes at a moderate gait; then they are taken into the office and examined. *We have never been able to find any change in their general condition, nor have we ever found them to show that anxiety and pallor which is seen after cocaine, and more especially after holocaine.*

Our observations were made upon patients of both sexes and of all ages.

Thus, in a child of 12 years we extracted the second great molar of the left side of the lower jaw, after having injected into both sides of the tooth $\frac{1}{4}$ cubic centimeter (4 minims) of the 2 per cent solution of Eucaine "B." The anæsthesia was perfect and no trouble followed the operation.

We have done extractions upon hysterical women and nervous men without the occurrence of anything abnormal.

The Relation of Diseases of the Teeth to the Chronic Swellings of the Lymphatic Glands.

By DR. H. KORNER HALLE, Berlin, Germany.
Reported by GEORGE RANDORF, Berlin, Germany.

The title indicates that the author has tried to show how, through a bad tooth, injurious matter may get into the lymphatic system. The most important question to settle was whether a so-called "dead tooth" only can serve as an entrance way, or also teeth with an inflamed pulp.

The author by experimenting on dogs' teeth has succeeded in proving the latter. The pulp of a narcotised dog was laid bare, some Prussian blue painted on, and the cavity closed with cement. After two to three days the dog was killed, and the pulp of the tooth as well as the submaxillary gland examined with a microscope. Some particles of the Prussian blue were found dispersed through the whole pulp up to the apex of the root, and also in the lymphatic glands, although in very small quantities.

How to explain this capability of absorption of the pulp is a further chapter of the work. It is a fact that in most researches, lymphatic vessels

in the pulp could not be discovered microscopically, therefore the author has tried to determine by "Gerota's" method, by means of an injection of Prussian blue into the tissues of the pulp, whether there existed embryonal absorbing combs; in other words, lymphatic crevices, lymphatic capillaries, or lymphatic vessels in the pulp. The experiments were made on freshly extracted human teeth and on calves' teeth. A whole net of vessels and capillary veins could be seen, but they were proved to be exclusively blood vessels. The result of these experiments was, "that there was no embryonal lymphatic vessels or spaces in the living pulp."

But if the first experiment still showed an absorption on behalf of the pulp which even extended to solid matter, this absorption does not take place in a regularly formed lymph path, but it is evidently done by the intercellular stream of liquids in the tissue, probably even simply by wandering cells which absorb the color and carry it. If once the absorbed matter gets beyond the apex of the roots, there is no more obstacle in the way of its carriage to the lymphatic gland.

Apart from these experimental investigations, the author has also tried to prove clinically that "dead teeth" as well as "living" defective teeth, may cause swellings of the lymphatic glands. He has examined about four hundred children; a far greater number than any of the earlier fellow workers has reached. To avoid the mistakes made in any of the earlier statistical researches, the author has prepared statistical tables, which exactly indicate how many milk teeth and remaining teeth every child had, how many teeth had recently been taken out; also the spot of defect in every bad tooth and the degree of it. The condition of the gum of every child, as well as those local or general illnesses which cause swelling of the glands were likewise taken into consideration, in order to exclude such cases in the estimation of swellings of the glands caused by illnesses of the teeth.

The author after closely studying the source of every single gland, was quite convinced that the upper teeth have no connection with the submaxillary glands, because the lymphatic vessels appertaining to them empty themselves into glands which are externally not perceptible, and he has arranged two different tables. To the first belong the teeth of both jaws, in order to compare the results with those of former researches; to the second—the more correct one—belong the dead teeth and those having an injured pulp of the lower jaw, whilst the teeth in the same condition in the upper jaw are not taken into account. A third table only enumerates the cases of swellings of the glands in proportion to teeth with an affected pulp.

The children are divided into three groups, the first group comprising three hundred and nineteen children who have no swelling of glands at

all; two hundred and thirty-six—seventy-four per cent—had no bad teeth which might have caused any swelling of the glands; eighty—twenty-six per cent—had such bad teeth. The second group comprised children who had swellings of the glands in different degrees, but there were no other causes besides bad teeth, consequently these children cannot be counted in statistics. Three thousand one hundred and sixty-one children are left for the third group who had swellings of the submaxillary glands in different degrees, for which no other causes could be found except those arising from bad teeth. At the tabular total of this third group, the proportions of the numbers were as follows:

Among three thousand one hundred and sixty-one children with swellings of the glands were two thousand three hundred and thirty-four, or seventy-eight and eight-tenths per cent, who had bad teeth of the third or fourth degree in the lower jaw. With one thousand six hundred and forty-six, or seventy per cent, of these children, the bad teeth, with regard to their position, intensity of illness, etc., corresponded exactly to the position and the degree of the swelling of the glands; with six hundred and eighty-eight, or twenty-nine and five-tenths per cent, the bad teeth and glands did not agree, or partly only. The third table proves that more than half of all the teeth made responsible for any swelling of the glands, had still a living pulp. The author states the summary of the result of his work in the following sentences:

1. Bad teeth, carious ones especially, play an important part as etiological factors in swellings of those lymphatic glands, in the regions of which the teeth are situated.

2. As long as the caries is limited to the enamel and dentine of the tooth, without influencing the pulp, there is no swelling of the gland to be feared.

3. If the pulp is deprived of its epithelial protection, which consists of the enamel and dentine of the tooth, there is the possibility of a swelling of the lymphatic gland through the medium of infectious or otherwise injurious matter.

4. Not only dead teeth with open cavity and root canals must be considered the entrance way for infectious matter, but also the teeth, the pulp of which is still alive, if exposed to the injurious influence of outer contact.

5. There are no lymphatic capillaries and no lymphatic vessels existing in the pulp, and yet the pulp possesses the capability of absorption.

A Case of Alveolar Hemorrhage Causing Death.

Reported by GEORGE RANDORF, Berlin, Germany.

Mr. E., who suffers from hemophilia, after extraction of a molar, suffered from bleeding of the gum and the alveoles of the upper jaw. Having applied various well known remedies without success, he went on the second day (May 25, 1897), to his doctor, who succeeded in partly stopping the bleeding.

The mouth, after it had been thoroughly cleansed, was found in the following condition at two o'clock on the same day: The mucous membrane had become sore through chloride of iron and other means which the patient had applied himself in a rather concentrated solution, and was strongly inclined to bleed.

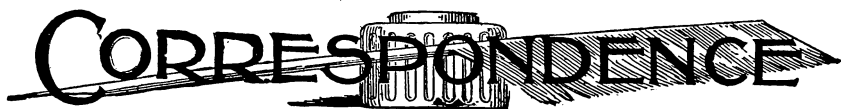
By means of the electric cautery the doctor succeeded in stopping the bleeding, and sent the patient away, recommending him to use all possible measures of precaution.

In about an hour the packing was again soaked with blood. Unfortunately the alveolus, or rather the gum behind the second molar began to bleed also. Whenever the packing or its substitute touched the bleeding spot, the bleeding became more profuse in consequence of the inclination of vomiting which overcame the patient. The doctor tried to stop the bleeding by applying hot water and steam, iron chloride packing, turpentine oil, antipyrin, argotin and secale, bags of ice, but without result. A vulcanized rubber plug could not be made, because no exact cast could be taken. Nor could two other doctors, consulted, master the bleeding. A solution of pure salt was three times administered to the patient as a substitute for the loss of blood. On the eighth day, the patient died in consequence of the bleeding.

It is noteworthy that the same patient some time before had himself pulled out a loose premolar (p. 2) and that the bleeding ceased spontaneously after two days.



CORRESPONDENCE



Office and Laboratory.

Editor ITEMS OF INTEREST:

Dear Sir: As another of the men like Dr. Hood, far away from city offices, I write to tell you that I have received more good out of the offices of men, illustrated in your journal, than anything else in it.

That, I am afraid at first sight, may not seem a complimentary statement, but on a little consideration of the real use of the points taken and their everyday utility, it does not follow that I have received no benefit from the other pages of the magazine.

I learned from one article how to make racks for all my excavators, pluggers and scalers—"a place for every one and every one in its place"—and with my cabinet just behind my chair, I can now get any one almost without looking for it. That idea alone saves much time daily, and having grooved every piece myself in spare moments, it was little expense.

From another I learned to put my fan where it cooled the patient, but did not blow on the bracket table.

I could multiply, but what need! Your waste paper basket makes me terse—it is so long and so deep. I write on foreign paper that it may go into a small space. Yours very truly,

J. H. SYMONS.

Waterloo, Que., Feb. 9, 1899.

Editor ITEMS OF INTEREST:

Reading the invitation extended to the readers of ITEMS OF INTEREST, in regard to the department of Office and Laboratory, will say for myself that I miss this department very much indeed.

I have gathered a little volume of good ideas, from viewing the arrangement and furnishings of the elegantly equipped dental apartments illustrated in ITEMS OF INTEREST. I do not think there could be another method suggested of more value, to create in a dentist the desire to improve the arrangements and beautify the surroundings in his office, than this department.

Dentists like myself, located some distance from the metropolises of our country, have few opportunities to visit and observe the style of

arrangement of better furnished offices, but by the department of Office and Laboratory, each reader of your excellent journal—no matter how remote he may be situated—has the great pleasure and benefit every month of “peeping into” some nice, tastily arranged office and laboratory, thereby noting some good idea by which he is generally profited.

Let us have the Office and Laboratory department again. Yours fraternally,

H. E. COTTINGHAM.

Morganfield, Ky., Feb. 9, 1899.

Editor ITEMS OF INTEREST:

The innovation in dental literature—Office and Laboratory department in ITEMS OF INTEREST—ought not to be discarded. It has been of the greatest interest to me; in fact, it caused me to make several important improvements in my operating room and parlor. Yours truly,

A. J. HECKER, D. D. S.

New York City, Feb. 10, 1899.

Matrices for Inlays.

Editor ITEMS OF INTEREST:

Dear Sir: In a recent number of ITEMS, I read your method of forming the matrix in the Jenkins method of inlay work.

Having had ten years' experience in making gold inlays, I wish to say that after the matrix is perfectly formed either with burnishers, cotton or spunk, fill the matrix with beeswax just flush, then with a sharp-pointed excavator, it can be removed without the least danger of changing the shape.

After I have removed the matrix, I turn it bottom side up on a glass slab and invest it by pouring upon it my investing material, whatever that may be; after it is hardened, pour hot water on until the wax is all washed out, then dry out and fill with solder of highest karat.

I think the Jenkins system of porcelain inlay must be beautiful, in the hands of those who are willing to take the necessary pains, for it does take more skill to make and insert an inlay perfectly as it should be, than to make a gold filling. That has been my experience, and I often make gold inlays.

I have one lady patient here who has what I call a square bite, viz.: the upper central lateral and cuspids meeting the lowers edge to edge and whose teeth have been refilled a number of times only to have the gold

crush and fall out. Since I began the inlay filling, we have never lost a single one out of five large inlays. I am very much interested in the Jenkins system.

I have only a coke furnace. Is there any small furnace made that can be used with gasoline? We have no gas system here.* Fraternally yours,

L. M. MATHEWS.

Hiawatha, Kan.

Glycerole.

Editor ITEMS OF INTEREST:

On page 44, January number of ITEMS OF INTEREST, Dr. Hanning recommends a root filing of "thymol, dried alum and glycerole."

The only definition of "glycerole" I can find, is a solution of some substance in glycerine—tannin, for instance—when it becomes *glycerole of tannin*.

I have noticed this term being used by different writers for some time, and believe they mean glycerine. If they do, why not say so? But if they mean a glycerole, why not say which one and not leave us in the dark? Call a spade by its name. Yours respectfully,

W. O. ROBINSON.

Parker, So. Dak., Jan. 24, 1899.

Steel for Matrices.

January 20, 1899.

Editor ITEMS OF INTEREST.

My Dear Doctor: On page 53 of the current number of the ITEMS OF INTEREST are described the matrices demonstrated by me at the meeting of the New Jersey State Dental Society last summer. One statement is incorrect and very misleading—that is, that "the strips of steel" are those that "is used for corset stays." The steel is that which is used to stiffen the bottom of skirts and the same is as thin as paper. I enclose a sample for your observation. Trusting you will correct this so that anyone desiring to make use of this method will not be led astray. I remain, cordially yours,

JOHN I. HART.

* Can any of our readers answer this question?—EDITOR.



Massachusetts Board of Registration in Dentistry.

A meeting of the Massachusetts Board of Registration in Dentistry, for the examination of candidates, will be held in Boston, Monday, March 20th, 1899, at 11.30 a. m., at Boston Dental Infirmary, 563 Tremont Street. Examination in Operative Dentistry at 12 o'clock.

The Theoretic examination will be held at State House-Civil Service rooms, commencing 9.30 a. m. Tuesday, and will include Anatomy, Physiology, Histology, Chemistry, Pathology, Materia Medica, Operative and Prosthetic Dentistry, Therapeutics, Surgery, Metallurgy, Anæsthesia, Orthodontia, Crown and Bridge Work.

Each candidate must come prepared with rubber-dam, gold and instruments, to demonstrate his skill in Operative Dentistry. Only one who wishes may bring his patient. So far as possible patients will be furnished.

All applications, together with the fee of twenty dollars, must be filed with the Secretary of the Board on or before March 13th, as no application for this meeting will be received after that date.

G. E. MITCHELL, D. D. S., Secretary.

25 Merrimack Street, Haverhill, Mass.

Detroit Dental Society.

Detroit, February 7, 1899.

The Detroit Dental Society at its last meeting passed resolutions recommending the appointment of dentists to the U. S. Army and Navy.

As chairman of the Committee on Resolutions, I am requested to recommend that the matter be brought before all societies.

This is a matter of importance to the profession, and if we expect any action from Congress, we must interest our Senators and Representatives.

L. C. MOORE, D.D.S.,

112 Miami avenue.

ITEMS OF INTEREST**Vermont Dental Society.**

The Vermont State Dental Society will hold its twenty-third annual meeting at Burlington, Vt., on March 15-17. Headquarters at the Van Ness House. A cordial invitation is extended to all members of the profession.

THOMAS MOUND, Secy.,
Rutland, Vt.

Ohio State Dental Society.

The officers of the Ohio State Dental Society for 1899 are as follows: President, L. P. Bethel, Kent; first vice-president, L. L. Barber, Toledo; second vice-president, H. F. Harvey, Cleveland; secretary, S. D. Ruggles, Portsmouth; treasurer, C. I. Keely, Hamilton.

S. D. RUGGLES, Secy.,
Portsmouth, Ohio.

Pennsylvania Dental Examiners.

Board of Dental Examiners of Pennsylvania will hold examinations April 11, 12, 13 and 14 in Philadelphia and Pittsburg, and June 13, 14, 15 and 16 in Philadelphia only.

Write for application papers to the Dental Council, Harrisburg, Pa.
G. W. KLUMP, Secy.

